

COMPETING DISCOURSES OF FARM ANIMAL WELFARE AND AGRI-FOOD RESTRUCTURING

Editorial

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In the past twenty years, growing attention has been given to human–animal relationships in the social sciences and in the humanities (Kalof and Fitzgerald 2007). Most of this literature has been concerned with constructing a historical understanding of the ways in which animals have been cared for or mistreated by humans (Franklin 1999; Eder 1996). Recent studies have underlined how attitudes and emotions involving animals range from those of love and compassion (Haraway 2008; Serpell 1986) to inattention and indifference (Fudge 2002a, 2002b) to violence and power (Adams 1990). Erica Fudge (2002a) reminds us that as humans we have placed different animals into different categories, according to notions of species, usefulness, domesticity or wildness. As a result of these varying and often contested orderings, animals are assigned to particular places and spaces.

In this special issue, we turn our attention to the places and spaces inhabited by farm animals and the practices humans engage with them. The contributors of this special issue explore, from different disciplines and perspectives, the complex entanglements of human and non-human animals in practices of animal science research, farming, market governance (through standards for animal products) and in practices of consumption in the specific geography of ‘Northern’ countries, more specifically Europe and the United States.

The papers in this collection assemble the bodies of farm animals and look at how an idea of welfare intervenes in their circulation, as animals or animal products, in discursive as well as practical ways. One could say that the special issue suggests a journey in the *making* and the *un-making* of the farm animal body, from the design in the lab to the brands associated to the animal products on the supermarket shelf.

The first place that we encounter is the scientific laboratory and the space of animal science research. In his article, Richard Twine examines the ‘*geneticization*’ of animal welfare research or, adopting Sarah Franklin’s perspective, what we might call ‘doing ethics by design’ (Franklin in Haraway 2008). Twine looks at the potential impact of genetics and genomics on animal welfare science, arguing that the ambivalence of welfare and production becomes especially salient around the idea of animal ‘health’, which can be taken to signify both welfare and production. Drawing upon interviews with animal scientists, Twine’s paper explores the tensions of this ambivalence in practice and the economic shaping of animal genomics and welfare. Although social and ethical considerations are increasingly on the agenda, it is suggested that they can only gain a limited foothold, due to both the commercial outlook of *agricultural science* and the economic constraints of contemporary global agriculture.

Elizabeth Ransom takes us to the new places of the political and commercial governance of animal welfare and looks at the emergence and development of new food standards.

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She points to the fact that there has been an explosion of agricultural animal welfare standards in recent years. This has coincided with an increase in all types of standards in the agri-food sector (e.g. food safety, food quality, environmental standards). With the increasing importance of standards, however, a shift has occurred from the use of standards as technical tools for market homogeneity (e.g. ISO, Codex Alimentarius), to the use of standards as strategic tools for accessing markets, coordinating systems, enhancing quality and safety assurance, product branding, and creating niche markets (Giovannucci and Reardon 2000; Reardon et al. 2001). This new form of governmentality (Miele et al. 2005) with its emphasis on the use of standards has occurred as the regulation of agri-food systems has shifted: whereas nation-states used to be the primary regulators of agri-food systems, the new agri-food terrain now includes not only nation-states, but also global governance organizations (e.g. World Trade Organization, WTO), multilateral and regional regulatory schemes (e.g. the European Union, EU) and private sector organisations, including transnational corporations (e.g. Cargill, Wal-Mart) (McMichael 2004; Higgins and Lawrence 2005; Scholte 2000).

While much of the existing literature relies on consumer-demand arguments for explaining the rise of animal welfare standards, Ransom's article uses sociological neo-institutionalism, specifically institutional isomorphism, to reveal that agri-food organizations are either forced by large food retailers or by the demands of interacting with other complex organizations (see also Friedberg 2004) to adopt animal welfare standards in an effort to maintain access to markets, political power and legitimacy (e.g. to endorse policies of Corporate Social Responsibility). Further, due to the continuing uncertainty surrounding the definition of agricultural animal welfare and the standards and techniques used to ensure compliance, the evidence supports the theory that organizations will model themselves after similar organizations that they perceive to be more legitimate or successful.

Henry Buller and Christine Cesar's article looks at how the welfare of farm animals is presented in the market place and, looking at a case of retailer strategies for animal products in France, they suggest that, although the welfare of farm animals is increasingly incorporated into notions of quality within the food chain, this is rarely an explicit component. Rather, claims about the quality of life of animals are bundled with a number of related environmental, health and territorial 'goods' to create a composite construction of product quality that differentially conceals and makes visible the animal's life and its setting. Buller and Cesar's paper examines the manner in which these bundled 'goods' are assembled during the commercialization process of animal products and considers the place of animal welfare within the bundling. As a strategy of market segmentation, the differential concealment and valorization of animal lives within the process of commercialization reveals, they argue, food chain actors' perceptions of an enduring tension in contemporary social attitudes towards farm animals and their transformation into meat products. This demonstrates not only ethical pluralism but also a necessary distancing that issues of welfare are having to confront. As such, the paper identifies the shifting discourses of 'quality' that are assembled around the product and the intended meanings as communicated to consumers.

The bundling of animal welfare claims with other quality characteristics as well as the distancing of the products from the animals, promoted by the supply-chain actors described by Buller and Cesar, suggest a growing ambivalence of European citizens towards purchasing animal products (Eurobarometer 2005, 2006; Kjaernes et al. 2007). Consumers' ambivalence about consumption of animal foods is also addressed in the article by Mayfield, Bennet, Tranter and Woolridge. They argue that the utilitarian

principle has informed a large part of the ethical debate, both in the past and in the present, concerning the interrelationships between humans and other animals, the use of non-human animals, and the obligations that we may have towards them (e.g. Singer 1975, 1989). In the social sciences, neoclassical economists have proposed a simplified model of consumer behaviour based on the utilitarian principle where consumers can be thought of as trying to maximize their utility from consumption. Within this model, Bennet (1995) has argued that animal welfare can be interpreted as an unsought 'externality' of the production and consumption of animal products. However, there are multiple perceptions of this 'externality': for some, the suffering of animals provides a reason for avoiding partially or completely the consumption of animal products and for becoming vegetarian or vegan; for others, it reduces the satisfaction (net-utility) that they obtain from the consumption of animal foods. These authors present the results of a recently conducted survey of European consumers (see also, Kjaernes et al. 2007) and they analyse how consumers in the UK, Sweden and Italy think differently about animal welfare and respond variably to the new marketing practices that offer animal *friendliness* by way of product labelling, welfare grading systems and food assurance marks. They point to the presence of a remarkable number of consumers that do not think about the animals when they shop for food. However, they also found some evidence of a growing number of consumers experiencing *cognitive dissonance* (from thinking about the suffering of animals for producing foods) and indications of the presence of high *transaction costs* for sourcing animal-friendly products (e.g. difficulties in identifying animal-friendly products on the market and limited availability or range of products).

Mayfield et al. argue that the utilitarian argument brings into question the merits of providing greater information to consumers about animal production methods, a policy suggested by many policy-makers within the EU as a means of generating 'demand pull' to improve the welfare of animals. Consumers may be blissfully unaware (or '*actively ignorant*', as Evans and Miele (forthcoming) put it) of the suffering of animals associated with the products they consume and derive high levels of utility from their consumption. Information on production methods may reduce consumers' utility and thus their overall welfare. From a *human utilitarian* position, this is not desirable, at least in the short term. In the longer run, the argument is that with appropriate information on animal welfare, consumers can demand the products with the animal welfare attributes that they want and so better satisfy their preferences and improve their welfare. In addition, if *animal utility* also becomes part of the equation (either in its own right or as a function of human utility), it will further strengthen the argument for improved consumer information on animal welfare and improved consumer choice.

The Vanhonacker, Verbeke, Van Poucke and Tuytens article addresses consumer concerns about farm animal welfare and, through a case study of Belgian consumers, it explores which type of citizen-consumer is more likely to translate their concerns into shopping behaviour. They identify shortcomings in the current marketing literature about animal welfare, which addresses separately citizens concerns for animal welfare and consumers' behaviour towards the acquisition of animal foods. Vanhonacker et al. maintain that, at present, there is a lack of studies that combine citizen and consumer perspectives on farm animal welfare, i.e. studies that consider both variations in citizen attitudes toward animal welfare on the one hand, and variations in the impact of animal welfare as a product attribute on consumers' food-choice decisions on the other. Such studies are relevant because the market for high-welfare products is rapidly evolving. In their case study, Vanhonacker et al. identify four groups of consumers who differ in their concern and interest in animal welfare as citizens and their readiness to engage as

consumers: two groups are clearly identified as high versus low concern and concomitant high and low readiness to engage as consumers. The other group is less consistent in its attitude and behaviour with moderate-to-low interest and moderate-to-low readiness to engage. Analysing the composition of the group more closely, the authors underline how the level of concern and engagement may be linked to residence (urban/rural), age, gender, family size, education and food habits. To summarize, the authors suggest that current and future consumers of animal-friendly foods are most likely to be found among the young, well-educated, urban, female population, living as single or in small households, and those who had experienced or are familiar with vegetarianism. They are concerned most with the welfare of farm animals and are most ready to translate their concern as citizens into consumption behaviour.

Similarly to Mayfield et al., the paper by Vanhonacker et al. aims to identify a tool (i.e. a strategy for market segmentation) in order to understand how to make welfare-friendly produced foods relevant to different consumers and how to position these products in a competitive marketing environment. Moreover, they suggest that the identification of different segments based on these two dimensions can help to better understand different viewpoints within society (the citizen–consumer duality), yielding a valuable basis to improve the societal (public and market-related) debate about the issue.

The next two articles consider the issue of animal welfare from the perspective of farmers and they both look at how the concern for the welfare of farm animals is enacted in farming practices.

The majority of the animal rights and animal welfare literature is highly critical of modern farming systems (Fraser 2001; Porcher 2006). This literature's mention of animal suffering in modern farming practices and 'factory farming' is a derogatory term used to denounce the cruelty of treating animals as mere means of production (Johnson 1991; Singer and Mason 2006). Animal rights movements more likely target farmers than other supply-chain actors for unethical behaviour towards animals and tend to define livestock farming as a cruel practice (Meyer and Staggenborg 1996). Hence, it is not surprising that animal welfare is a highly contested issue among farmers; they feel misunderstood, wrongly accused and unacknowledged in 'naturally' caring for and about animals as part of their expertise and knowledge. At the same time, they admit that they are under pressure to produce as cheaply and efficiently as possible, which limits the room for animal friendliness (Bock and Van Huik 2007). So far, little is known about the experiences of farmers, their construction of animal welfare and the differences among them.¹

Of the two articles about animal welfare as seen through the eyes of farmers included in this special issue, the first compares the attitudes towards animal welfare of Norwegian farmers and Norwegian consumers. The second paper tries to understand how the perception of animal welfare is embedded in farmers' relationships with animals, and it looks at farmers' attitudes to different species (cattle, pigs and chickens) in three different countries: France, Sweden and the Netherlands.

Skarstad, Terragni and Torjusen compare the definitions of animal welfare of Norwegian farmers and consumers as well as their evaluation of animal welfare regulations and product labelling. Their study suggests that farmers and consumers tend to share the idea that, all in all, farm animals in Norway have a better life than farm animals raised in other countries because of the more small-scale, less-industrialized, less profit-oriented and,

¹ For a recently conducted study, see the special issue on pig production in Europe of the *British Food Journal*, vol. 109, no. 11, 2007.

hence, more *caring* character of Norwegian agriculture. Both farmers and consumers frame ‘animal welfare’ in a similar way and their definition of a good life for farm animals means attending animals with *care* and achieving a balance between the respect for the animal’s freedom and the farm economy. However, Skarstad et al. also found that the interpretation of what constitutes ‘good care’ for animals and an animal’s freedom varies between the two groups. A further difference emerges in the evaluation of the economic performance of the farm: whereas Norwegian farmers largely define animal welfare within the limits of their current level of production and their current farming practices, consumers do not prioritize farm profitability.

Both farmers and consumers in Norway were hesitant about the prospect of further regulation and about proposals to address the welfare of farm animals by means of product labelling. Instead of improving the welfare of farm animals, more regulations could force Norwegian farmers to modernize and, hence, ‘industrialize’ production. Skarstad et al. suggest that animal welfare regulations and food labelling may even change producers’ and consumers’ definitions of animal welfare, and it may lead to moving away from a common understanding of welfare as ‘well-treated farm animals’ to a more abstract and standardized notion, where animals are reshaped into ‘well-produced food commodities’. Paradoxically, animal welfare regulations may contribute thus to redefining the boundaries between animal and food: making the animals become more ‘food’ rather than fundamentally ‘animals’. ‘The regulated animal’, if thought of as food all along, may then contrast with what has emerged as a main aspect of good animal welfare: farm animals are animals that farmers need to relate to and care for, and not just means for producing food.

Issues of care for, empathy towards and knowledge about farm animals are also addressed in the article by Bock, Van Huik, Prutzer, Kling and Eveillard. These authors analyse how cattle, pig and poultry farmers in France, Sweden and the Netherlands describe their relationships with their animals, and they explore the factors that influence the levels of attachment to animals. The analysis draws upon Willkie’s (2005) framework of farmer–animal relationships, which distinguishes between different levels of attachment and detachment. This framework proved to be very useful for explaining why farmers develop different levels of attachment to animals, with the species, farm sector and housing system all playing important roles. While almost all farmers perceived taking good care of animals and avoidance of suffering as core elements of their profession and caring about animals as central to their definition of a ‘good farmer’, different groups of farmers showed clear differences in levels of attachment to their animals. The differences between countries were small and generally related to the prevalence of certain sectors and production methods. Across countries, farmers tended to become more attached to cows than to pigs or chickens and felt more connection towards breeding, as opposed to fattening, animals. However, the organization of production at the farm mattered too, as it defined the frequency, intensity and intimacy of the farmer’s contact with individual animals. As such, it influenced the visibility of the animal as a sentient being instead of a (living) tool of production. The authors conclude that ‘getting close to the animal’ is important as it nurtures the relationship between farmer and animal and it encourages farmers to recognize the ‘*animalian*’ nature of their animals (Buller 2004), which motivates farmers to attend to their wellbeing.

Conclusions

In following the making and un-making of farm animal bodies from the scientific labs for improving animal welfare by ‘geneticization’ to the supermarket shelves, where

ubiquitous claims of animal friendliness are associated to animal products, the papers in this special issue have ruminated around two issues: the growing *ambivalence* of humans to use animals for food production (Miele et al. 2005) and the great *malleability* of the concept of animal welfare. Whereas animal welfare is associated with genetic robustness in a lab, in the market it is linked to high quality; for consumers it is associated with ethical choice, better taste and healthier products; for farmers it is the care for their animals and it is part of their vocation; for animal rights movements it is the respect for natural animality, traditional small-scale production and so forth. One implication of this malleability of the concept of animal welfare is that it might be used to address very different things, some fictional, others more material: looking at animal products in the market, animal welfare is more a humanistic narrative about animals' lives (consisting of happiness, freedom and natural living); on the farm it deals with the corporeality of animals and the farmer's *closeness* matters for how they are kept. It is in these latter places that the quality of life of specific animals is decided: it may or may not be considered important because of the animal's species, breed, and use in certain housing systems or for specific production purposes, and how close farmers can and want to come to their animals, when taking care of them.

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SEARCHING FOR THE 'WIN-WIN'? ANIMALS, GENOMICS AND WELFARE

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Introduction

As it tries to cast off prior attachments to a definition of the social purely in terms of the human there are signs that social science investigations of human/animal relationalities are on the increase¹. In considering animal welfare in agriculture there are of course longer standing traditions of analysis into food, rurality and agricultural systems that offer ways into a focus upon animals themselves. For those who centre an analysis around issues of power and justice it is problematic to focus solely on welfare. A welfarist approach is a specific kind of ethical approach which operates within the confines of anthropocentric thought and accepts the utility of animals. In a compassionate and scientific approach toward albeit more *humane* human/animal relations it continues to proffer a 'human' that exists over and above other animals. Welfare in this understanding may be understood as a placation of our dissonance in our treatment toward other animals. Or indeed one may be a 'new welfarist' (see Francione 1996) whom, although in critique of the utilitarian ethics of animal welfare, supports an approach of incremental change toward a longer term 'progress' in our treatment of other animals. But to underline at the outset that a discussion of animal welfare speaks to a particular *frame* of human/animal relations does not disqualify it from sociological interest.

Diverse conceptions of animal welfare point to competing discourses of the animal and underlying values which posit the 'good' life for animals differently. Whilst those whose values fit better within non-utilitarian ethical frameworks (for example, virtue ethics or intrinsic value positions) may want to argue that a 'good' life for an animal would consist of their actual escape from a system of agricultural commodification we must note that even within welfarist viewpoints there are a diversity of positions. How these are expressed within science discourse is of interest as it may tell us something about the social context of animal science generally and more specifically about conflicting discourses and changes of emphasis. Fraser (2003: 435) introduces a useful description of three different conceptions of animal welfare at play within the broader field of animal welfare science, but also animal science generally. First, we see an emphasis on biological functioning and health as the main determinant of welfare. Second, we see a framework which emphasises the 'affective states' of animals and so is more focussed upon concerns of pain, suffering and the measurement of other internal states. Third, Fraser outlines a framework which conceptualises welfare as allowing the animal to live as closely as possible to 'natural' circumstances (*ibid.*). These are rather paradigmatic since they span a spectrum from neo-Cartesian views of animals to others which attempt to respect the sociality, subjectivity and environmental embeddedness of animals. Such

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¹ For example, the British Sociological Association recently created a study group centred upon human/animal relations.

frameworks, as Fraser acknowledges, are themselves culturally embedded and so one must bear in mind how they might translate or not in the geo-politics of global agricultural production². In turn trends in welfare practice and animal science discourse speak to broader debates in agriculture around productivist and non-productivist values as well as piquing the sociological interest in the mobility of society/nature relations and conceptualisations. This paper adjoins this interest with a focus upon genetic selection and the emergence of new molecular technologies in animal breeding. It explores some of the impacts that selection and the uptake of genomics may have on understandings of welfare.

Methods

As well as referring to existing research I draw upon semi-structured interview data obtained during 2006 when 22 UK based animal scientists were interviewed about ethical and social aspects of developments in farm animal genetics. These comprised welfare scientists as well as geneticists and thus offer insights on current salient issues and differing ideas of animal welfare. All these scientists either worked at or were involved in work at two leading research centres in Central Scotland, namely the Scottish Agricultural College and the nearby Roslin Institute. Approximately a quarter interviewed were welfare scientists, with the remainder mostly animal geneticists (two agricultural economists were also interviewed). Six were female and sixteen were male, with the majority established scientists as opposed to early career. Interviewees were accessed both by letter and e-mail. The current UK Research Council policy of encouraging collaboration between research councils undoubtedly helped access as this work is funded by the ESRC (Economic and Social Research Council) whilst the Roslin Institute is funded by the BBSRC (Biotechnology and Biological Sciences Research Council). These two research centres were chosen for several reasons. They are world leaders in their fields, they have consistently shown a willingness to engage with ethical and social issues, and they are both interdisciplinary animal science research centres. This entailed that they were ideal sites to probe a number of questions not least the potential impact of genetics and genomics on understandings of animal welfare. Data was analysed using Atlas.ti software – coded to identify various themes of interest. A broader picture of the animal science field was also obtained through attendance at animal science conferences as well as through literature review.

Furthermore this paper refers to the recent work of the UK Farm Animal Welfare Council (FAWC) on the ‘Welfare Implications of Animal Breeding Technologies in Commercial Agriculture’ (2004). We remain in the early days of molecular techniques. Genomics has seen, to date, only a limited commercialisation. Genetic modification (GM) and cloning remain under research and may see a limited commercialisation within 5-10 years³. Therefore before turning to molecular technologies (in the main genomics) I want to begin by assessing the relationship between non-molecular genetic selection (selective breeding) - which has itself led to

² I thank one of my anonymous referees for underlining this point. It is highly salient to discussions of animal welfare but beyond the scope of this current paper.

³ This is contextualised by global politics. Scientists I interviewed in the main did not see a short term future for these techniques due to both technical obstacles and public acceptability. However it's worth noting that GM fish may be commercialised in North America in a few years time, and cloning research for agriculture is being actively pursued in North America and other parts of the world. Moreover one of the issues raised by the FAWC report relates to the *import* to the UK of GM or cloned embryos.

very significant increases in productivity across all farm animal species in the post-war period - and welfare

Genetic Selection, Unintended Consequences and Welfare

On the one hand from a perspective trained upon the goals of agricultural output genetic selection has been incredibly successful in optimising animal bodies to produce more meat and milk. Indeed it has been too successful in that the economies of the West are witness to a situation where output exceeds requirements (see Bishop & Woolliams 2004: 913) and it is very probable that the low cost availability of animal products is a contributory factor to diseases common to affluent countries such as heart disease, obesity and various forms of cancer. Although this health burden certainly represents one unintended consequence of the Fordist and biopolitical appropriation of animal bodies, decisively enabled by their genetic interrogation, it is a different unintended consequence that I wish to focus upon here.

It has become clear that the productivity drive of selecting for particular genotypes has had the unintended consequence of producing negative welfare impacts upon agricultural animals. So much so that ‘welfare’ issues arising out of production also themselves become issues of profit compromising production. I shall return to the issue of conceptual confusion over ‘welfare’ and ‘production’ later on in the paper. The productivity drive goes hand in hand with other goals of reducing costs in related areas. Thus it is tied to also producing animals that can subsist on low feed intakes, as well as other non-genetic technical attempts to maximise efficiency such as the introduction of robotic milking systems to reduce labour costs (see Holloway 2007). That selection for high production efficiency has resulted in deleterious welfare impacts was reinforced within my interviews with both animal geneticists and animal welfare scientists. These two quotes came from animal geneticists:

“They’ve gone hell for leather for high yielding dairy cows but in actual fact it’s made them more susceptible to mastitis and because the management, you know, it can only go so far.”

“It’s clear that many of our current systems and practices have question marks over social acceptability, ethical issues and that includes the focus on a rather narrow set of production related characteristics in our breeding programmes which is now known to have caused some unfavourable side effects. So focus on the milk yield in dairy cattle for instance is known to have caused a reduction in fertility, probably an increase in mastitis, probably an increase in lameness.”

In the example here of dairy cattle the emphasis on production has been to such an extent that the unintended consequence has come to be an issue for the perpetuation of productivity itself. In a broad ranging review paper that presented over 100 references on undesirable correlated effects of selection for high production efficiency Rauw et. al. showed that such an approach seems to put animals at a greater risk of behavioural, physiological and immunological problems (1998). They suggest that animal breeding scientists in their focus upon the technical aspects of selection may have lost sight of some of the underlying biology of genetic selection. Thus they put forward the theory that if *“genetic changes are too radical or sought too rapidly, the population may lack the time required to adapt to the changes imposed on it by selection and the homeostatic balance of the animal is at risk”* and that molecular

techniques could exacerbate this problem (ibid., p. 27-9). This theory appears to hold true in the case of battery hens. The productivity of egg laying hens is increased through the genetic manipulation of body weight and the environmental manipulation of day length. Yet the egg laying pressures are such that a hen's body starts drawing upon reserves of calcium from its bones in order to make eggshell. Unsurprisingly this weakens the bird's skeletal structure contributing to welfare problems (see Duncan 2001: 210/11).

The Farm Animal Welfare Council (FAWC) has for a considerable time drawn attention to the negative welfare impacts of conventional selective breeding techniques (1997, 2004) arguing that health traits should take precedence over production traits in breeding programmes. Yet there is a sense that it is difficult to make the case for welfare when a particular problem may be treated and does not impact seriously upon profit. It is difficult for a welfare argument to have leverage if proposed changes would impact upon already established breeding programmes that are commercially successful (see FAWC 2004: 17). Nevertheless as I discuss further below there *has* been a tangible shift away from purely productivist values in the research pursued by animal genetics scientists.

The hope from animal geneticists is in fact that more genomic information will allow the possibility to avoid the negative side effects of selection although it is unlikely that molecular techniques will offer an escape from unintended consequences. This provides a good example of what Beck refers to as the 'boomerang effect' wherein "*sooner or later the risks also catch up with those who produce or profit from them*" (1992: 37). Thus the over-rationalisation of animal bodies comes unstuck and human attempts to push home the mastery of other species come up against a biological limit which potentially opens a space for critical reflection. But since solutions to the unintended consequences of genetic selection are generally posited in terms of more, yet different, genetic selection it is clear that the critical reflexivity does not extend *systematically* to a questioning of selection per se. This is evident in Duncan's paper on animal welfare issues in the poultry industry where he repeatedly argues that the solution will be found in genetics (2001). It might appear odd that the very same technical-rational genetics approach that has been implicated in the problem should be turned to to address it. On the one hand it may not seem reliable and, more sociologically, it may perpetuate a particularly genetic and arguably reductive view of the animal. Yet in the frame of animal breeding it is difficult to conceive of an alternative that could actually address the physiological problems which animals face. This issue arose in my interviews with animal scientists. Thus in a discussion of lameness with an animal welfare scientist the following exchange:

RT: "*What causes that in most cases?*"

Scientist: "*It's a production disease; it's an intrinsic part of modern dairy production*"

RT: "*And so even though that's a production disease, there are moves to try and address that through genetic selection?*"

Scientist: "*Yes there are, you can select bulls whose daughters should have a better locomotion score. Several issues there, one is we believe on our side of the fence, the welfare side, they don't really measure this very well. And even if they did what we wanted them to do there's an enormous amount of difficulty*"

at this end and just in measuring our farms. Consequently the heritability is poor. So they can't make much progress with it anyway because the heritability is slow.

RT: *But it's using the same method that's produced it to try and address it isn't it?*

Scientist: *You mean breeding?*

RT: *Yes*

Scientist: *Yes which is curious.*

RT: *Because if you tried to solve it through an environmental way it wouldn't be cost efficient?*

Scientist: *Well people, very good question I mean, yes it's not just that they've been bred to produce lots of milk, they're also kept indoors and the longer they're indoors, the bigger the risk they get lame. So they could be kept out more often, they could be fed at a lower rate and probably milked less often, that would probably reduce the risk. They could be in better quality cubicles. But that's investment. They could have their feet trimmed more often..*

RT: *It's labour cost?*

Scientist: *..But it costs, this is the thing it costs a lot, you know lame cows don't produce milk; they often have to be replaced. And that's one of the things that we've been trying to get across as you know if you actually add up the hidden cost.*

Even though it's a production disease it is multi-factorial and not wholly genetic, although there is a correlation between selection for productivity and lameness. In some cases then the economic context of agriculture may play a role in shaping which problem solving strategy may be adopted. Yet the question of whether selection is returned to in order to solve a welfare problem also came up when I pondered on its curiosity to a geneticist:

“Well it's interesting actually because I could argue exactly the opposite. I could say if selection caused the problem then selection stands the biggest chance of being able to correct it. Yes? But that would be my argument. I can understand that people would say well selection caused the problem so therefore we're going to do something else to resolve the problem. But if the problem exists through selection unless you select against that problem it will remain there. Unless we genetically improve cows for mastitis they will remain at their current level of mastitis. So selection obviously has got to occur in order to be able to raise the mastitis level. The way I see it that the problem has actually been not through selection itself but through inadequate selection”.

This last sentence is particularly important I think as it reflects a view that is rather widespread in animal science that it is not a particularly approach or technology that is 'good' or 'bad' but how you apply it. This is a rather crucial point of contention vis-à-vis social views of science where techniques themselves are seen as socially, historically and politically embedded. But to accept this might be to allow an overly

critical stance that could undermine the rationale of conventional breeding itself. Therefore it is unsurprising that a position of technological neutrality is asserted. Nevertheless due to the historical trajectory of genetic selection and its associated material construction of the animal toward productivity there must in fact be some truth in the above quote arguing for a genetic response. Thus it would be quite incorrect to portray welfare scientists as against selection per se. On this point one welfare scientist said to me:

“So it’s like you know I disapprove of the fact that we got there in the first place, but given that we are there and if these things are developed I think that’s the least we can do”

Similarly welfare scientists were broadly strongly in favour of selecting animals that could cope with better welfare environments – a situation necessitated by the fact that due to a past history of selection for productivity some animals are in fact ill suited in terms of strength, mobility and health for better welfare environments. Although a non-utilitarian ethical framework may want to take the position that it is selection itself that is the problem animal welfare scientists operate within a context where pragmatism is to the fore and their wishes are constrained by the broader economic goals of commercial agriculture. But if animal welfare science is partly tasked with responding to public concerns about the experience of animals in agriculture then it seems that, given the legacy of unintended consequences, there needs to be further critical reflection upon selection itself. One important shift in selection goals that may be seen as a response to such societal concerns has been a new focus on health alongside productivity and it is this to which I now turn.

Welfare as Health and the Idea of the Win/Win

Clearly it is in the interests of animal production to stem the effects of these unintended consequences not self-evidently for ethical reasons but because they also impact upon profitability. But if this can be combined with an approach that may be said to improve the background health of animals and potentially also improve their welfare then could it also be satisfactory to the concerns of welfare science and by implication to some sense of public concern? During the interview process a recurrent idea revealed by the data analysis was that of the win/win selection. This encapsulates a broader selection decision that is said to balance commercial pressures with concerns of animal welfare. In a way it might be seen as the perfect response to animal ambivalence, an attempt to satisfy both trends of instrumentalisation and partial subjectification in Western human/animal relations simultaneously. Within the interview data the idea was mentioned by both geneticists and animal welfare scientists. Here follow some extracts, each from a different scientist:

“So in a way what we’re doing is a win-win situation. If we breed animals that are more resistant to disease the farmers spend less time and less money on preventative treatments but also the welfare of the animals is improved as well in that they are inherently more healthy than, you know, had we picked the wrong sire”.

“I think many farmers would believe that pushing for very high standards of welfare that perhaps people who are detached from animals aspire to, is going to cost a lot of money. But in fact a lot of our research on larger species at least shows that there

can be win-wins here. In dairy cattle for instance we've shown that by expanding selection away from just milk production alone, to include resistance to mastitis and lameness and to include fertility, it is expected to increase economic returns as well as reduce welfare problems".

"Obviously some diseases are of major economic importance, and if one could make animals that are basically fitter, healthier and more able to resist disease, then you're benefiting the animal, you're reducing the need to treat them with drugs and antibiotics so there's a potential downstream benefit for the human food chain. And so there's a sort of a potential for a win-win situation if you can do that effectively"

"There are quite a few examples where welfare and production values go hand in hand but they obviously don't totally mix or at least not in the eyes of society otherwise there wouldn't be people saying ban these cruel factory farms. I don't see production and welfare as being equivalent, but I don't see there being a problem with working on a project in which both production and welfare are improved. And it's certainly more likely to be taken up by industry if you can show that you have invented something that's going to improve both welfare and production and everybody wins"

Within the emerging discourse of sustainable production there is considerable scope for so called win/win research projects with animal welfare scientists and geneticists working together. One example is a focus on the concept of 'robustness'. Thus a recent DEFRA (The UK government's Department for Environment, Food and Rural Affairs) funded project explores the idea of the robust dairy cow. Here a robust cow is defined as one that adapts well to a wide range of environmental conditions or in genetic terms expresses a reduced genotype x environment interaction when tested across different environments⁴. This overlaps with the previous example of the need to select for animals that can cope with improved welfare environments but 'robustness' is also about producing animals that are overall less sensitive to environmental variability. It is important to scrutinize the implicit understanding of animal welfare that may be at play within the win/win and related concepts such as 'robustness'. Although reflexivity to the short-termism of pursuing narrow production breeding goals may have opened up the opportunity for a broader, welfare inflected selection criteria it may be constraining the sort of welfare strategies adopted. While one might counter that it is not surprising that the boundary between production and welfare should become blurred for they are both utilitarian approaches, the indistinction of the terms within the idea of the win/win raises philosophical questions over the very ethos of animal welfare. If we highlight the words of the welfare scientist above – *"I don't see production and welfare as being equivalent, but I don't see there being a problem with working on a project in which both production and welfare are improved"* – the main ethos of welfare is perhaps one of pragmatism, doing what one can to improve welfare within the constraining context of commercial precedence. Furthermore the approach of adapting animals to

⁴ See http://www2.defra.gov.uk/research/project_data/More.asp?I=LK0657&M=CFO&V=NMR (Last Accessed April 2007).

particular environments may well open up novel ethical concerns. This was captured well in an extract with an animal welfare scientist –

“Adapting animals to environments is not necessary a bad thing, it just depends on how you do it and what the reasons are for why you do it....in the wrong hands it could be used for example to breed animals which are capable of coping with or indeed maybe thriving in what would currently be regarded as sub optimal conditions”

In terms of narrow motives of commercial gain it is not difficult to see the possible attraction of a more docile and perhaps less sentient animal that could be kept in cheaper conditions. As the FAWC report argues *“whilst breeding for temperament has been carried out for hundreds of years, the protection of behavioural flexibility and sentience in animal breeding is becoming an issue where regulation may be necessary”* (2004: 26). The report also offers the example of research on genetically blind hens that were said to be both more productive and had reduced stress levels⁵. Could then such animals be considered to be the products of a win-win selection? Molecular techniques may offer more opportunities for these sort of applications that ethically, as the FAWC report argues, go beyond issues of pain, stress and suffering (see 2004: 25), instead asking questions of the human, of ‘how far we should go’? One might ask how the legal status of farm animals in the Treaty of Rome as ‘sentient beings’ as opposed to ‘agricultural products’ might inform this debate?⁶ Perhaps the Protocol on Animal Welfare as part of the Treaty, which made history by referring to animals as ‘sentient beings’, could be used to legally argue against such selection decisions. However, given the gradual selection for docility that has taken place using non-molecular selective breeding one could anticipate that proponents would use ‘arguments from precedent’ (see Parens 1998, Twine, 2007b) to try and justify such selection even if the use of molecular techniques could be used to make such changes more direct, more biologically systematic and more rapid. In addition, as Camm & Bowles point out, the reference to animals as ‘sentient beings’ does not in fact *“exclude the treatment of animals as goods or agricultural products in other contexts”* (2000: 201). Whilst sentience is one concept that may be introduced to perform a protectionist role, a further one is that of telos⁷. Rollin has defined this as the *“set of needs and interests which are genetically based, and environmentally expressed, and which collectively constitute or define the ‘form of life’ or way of living exhibited by that animal, and whose fulfilment or thwarting matter to the animals”* (2003: 344/5). It is of course difficult to talk of a telos in animals that have been gradually but significantly selectively bred over a long period of time and to argue that such ‘thwarting’ has not *already* taken place. This is indeed the understanding behind ideas of corrective selection that seeks to ameliorate the negative welfare consequences of past selection. I will return to the question around these sorts of selection decisions in the next section.

⁵ It is interesting to note that in a 2006 interview utilitarian philosopher and author of *Animal Liberation* Peter Singer advocated using biotechnology to produce ‘brainless’ or wingless birds. See Broudy (2006) at <http://www.salon.com/books/int/2006/05/08/singer> (Last accessed April 2007).

⁶ Thank you to one of my anonymous referees for asking this very question.

⁷ Although it should be underlined that Rollin argues against the position that *telos* should prohibit genetic engineering (ibid.). One could certainly take issue with Rollin’s argument, his definition of *telos*, and the essentialist problems of the concept generally, but that discussion is beyond the scope of this paper.

Conventional selection and the use of molecular techniques can be used to impact upon both the health *and* behaviour of animals. With increased knowledge of gene function and interaction more complicated traits that have been harder to measure may come into the field of manipulation. The concerns for welfare science are that welfare may come to be seen more and more in terms of measurable health, function and performance, and that aspects of welfare that pertain more to the subjective and social life of animals - aspects which may have more of a cost in terms of their provision – will be de-emphasised⁸. The concern here may be that the partial geneticisation of welfare is also an instrumentalisation of welfare where aspects such as health and robustness may be seen as bound up in productivism as much as they are in welfare. Additionally they could be seen as invested in an overly biologicistic account of farm animals, as was the concern of one animal welfare scientist interviewed:

“On the other hand there’s also a trend, a parallel trend where it’s almost like we’re going backwards in time and welfare is becoming more and more an issue just of health, you know physical health. And that is partly what we’re talking about, you know it’s like metabolic stress because they’re in the first place conceptualising animals as complex production systems and then they’re talking about the health of that system. I see it as my own task and other colleagues to counterbalance and to develop concepts that are close to the subjectivity of the animal. And to also, I mean how could you possibly talk about boredom and depression you know in a complex metabolic system? It’s not going to happen is it?”

There is of course an historical legacy of seeing animals as more biological vis-à-vis the human (e.g. see Birke 1994). It is just this legacy that many animal welfare scientists are trying to erode by stressing the subjective and social life of farm animals. But for some animal scientists the use in the above extract of terms such as boredom and depression represents an error of anthropomorphism. In the tensions that do take place between welfare science and animal genetics the charge of anthropomorphism is certainly deployed as a means to both reinforce human/animal dualism and to portray animal welfare as somehow less than scientific. It is more accurate to present the two fields (each diverse as they are) as in opposition over underlying assumptions of the animal and human/animal relations. Without wanting to dismiss the problems of anthropomorphism the concept does operate to perform ‘boundary work’ (Gieryn 1983) between different claims over ‘real’ science within the broader animal science field. Classically then with its accoutrements of control, ‘objective’ measurement, statistics and dispassion, but most decisively in its service to applied commercial goals, genetics has been hegemonic. Attending animal science conferences as part of my research it became apparent that welfare remains in a marginal position, and welfare scientists reported that they were more likely to attend ‘their own’ conferences. The debate over whether we can use terms such as boredom and depression is less important than recognising a subjective and social life for animals and allowing also for the a psychological as well as physical impact of close

⁸ For a critique of the position which argues that animal welfare research must focus on the functioning of animals because subjective experiences fall outside the realm of scientific enquiry, or that studying the functioning of animals is sufficient because subjective experiences and functioning are closely correlated, see Fraser et.al. (1997).

confinement and so on. The point here is that there may be a significant difference in the sort of welfare and accompanied notions of what constitutes a ‘good’ life for animals in agriculture allowed for in the language of the win/win and selection generally compared to that found in research that takes animal subjectivity and sociality seriously. Since molecular approaches such as genomics are not typically about seeing the whole animal but about probing causal relations between genotype and function within a commercially orientated rationale it is likely that the sort of welfare framework employed (if at all) will be more akin to that expressed in the quotation above. This corresponds to the first framework discussed by Fraser (2003) at the outset of this paper as welfare in terms of biological functioning. If this is correct then molecular approaches could represent a consolidation of neo-Cartesian understandings of farm animals; and discursive jousting with some areas of animal welfare science as the site of their contestation⁹. In the final section of this paper I examine more closely the possible relationship that could emerge between genomics and welfare.

Genomics and Animal Welfare

If we were to take the position of neutrality assessing the impact of genomics upon animal welfare this would be an exercise in determining how social and economic contexts were likely to drive the application of emergent molecular technologies in farm animal breeding. However a sociological approach argues for the sociality of scientific practice and stresses that both science and technologies are redolent in meaning, values and goals. The naturalisation of a broadly utilitarian outlook toward nonhuman animals is the case in point in animal sciences. Genome sequencing work on agricultural animals takes place within the context of making economic efficiency gains in farm animal production. Here the production of genomic knowledge is bound up in the biopolitical revelation of the animal body to tease out new value and new strategies for commodification (see Twine 2007a). Unlike genetic modification genomics works within pre-existing variation, for example, finding disease resistant genotypes in the current pool. Its techniques such as gene assisted selection and marker assisted selection may be used to alter a population’s gene pool through the direct identification of economically valuable genotypes. Whilst the production of GM or cloned animals raises important ethical and welfare questions (see Holland & Johnson 1998, Van Reenen et. al. 2001, FAWC 1998) the focus here is on genomics. Genomics is sometimes constructed as the less radical of molecular techniques in the face of public concern over GM. Nevertheless genomics, although still not in widespread commercial use, offers more precision and control in genetic selection. Conventional selection which has operated without the knowledge of specific underlying genes is often parodied as a ‘black box’ approach, whereas genomics is championed as opening this box, as providing enlightenment, through the possibility of gene identification, and direct selection.

In spite of this there was a feeling amongst scientists interviewed that genomics was certainly yet to live up to expectations and had been subjected to a fair amount of hype as these extracts illustrate:

⁹ Relatedly, there is now increasing pressure upon scientists to produce an objective measure that provides stakeholders (e.g. consumers) with an overall score for welfare. This may serve to privilege those very ‘objective’ quantifiable measures that do not typically perform the best job at understanding the subjective, qualitative aspects of animal welfare. I thank one of the anonymous reviewers for this point.

“quite often results from genomics and genetics are sensationalised and built up and the expectations from genomics and genetics are so high or have been certainly in the farm animal industry, whereas in reality to date it hasn’t actually reaped nearly the benefits that one might expect given the amount of investment that has been put into it”

“there have been massive advances in molecular genetics, there have been huge contributions to knowledge, but I would argue that contributions to genetic improvement of animals and probably to a lesser extent plants, have not lived up to those earlier promises”

“many of my colleagues here we’re slightly cynical about the great sort of splurge of interest in genomics and the apparent potential of it. And in fact it’s not delivered very much at all. Whereas the whole issue of just how effective marker assisted selection can actually be as opposed to the more old fashioned quantitative genetic approach which certainly works, this is just an ideological thing. I guess I side with my quantitative genetic colleagues here who are probably seen as being in the old camp but that’s because they work with real life animals breeders you know and they actually are out there making a difference. Whereas the other people I think are much more lab based, kind of more theoretical really”

Although there was a certain loyalty to quantitative genetics expressed there was also enthusiasm in molecular techniques and the new knowledge generated. The approaches are not mutually exclusive and are beginning to be used side by side. Although genomics is yet to find a widespread commercialisation the speed at which molecular knowledge can be sequenced has increased whilst the cost of the process has decreased. This has co-evolved with the IT infrastructure necessary for the creation and analysis of large scale animal genomics databases. Advocates of genomics in the wider literature see the technology as increasing the accuracy of estimated breeding values, the rate of ‘genetic improvement’ (Plastow 2006: 3) and providing the ability to target traits, such as disease resistance and meat quality, that are difficult to measure with traditional selection (DeNise 2004: 4, Bishop & Woolliams 2004: 913). Moreover phenotype measurement of some traits is expensive and so marker technology is seen as a possible solution (Dekkers 2004, Plastow 2006). Genomics is also seen as providing an important contribution to sustainable livestock production systems (Bishop & Woolliams 2004).

The emergence of sustainability as a key principal in agriculture and animal science funding has meant that genomics has become partly orientated to this agenda. It is worth bearing in mind the now familiar slipperiness of ‘sustainability’ in that it can at times be used to refer to a narrow notion of *economic* sustainability. However, an interesting consequence of the emergence of sustainability which reflects a partial erosion of productivism is that breeding goals now may include ‘socially and environmentally important traits’ alongside the traditional focus on selection for economic output (e.g. Kanis et. al. 2005). There has been something of a shift from within animal science that indicates the awareness of a relationship between economic short termism; unwanted side effects and therefore unsustainability (see Olesen et. al.

2000: 570). It is as yet unclear as to the extent to which such awareness inflects genomics. If one scrutinises lists of currently identified genetic markers and commercialised DNA tests for these markers one sees a diversity of foci (see e.g. Dekkers 2004: 317, Rothschild 2004: 12, Hocquette et. al. 2007: 164). Although we observe markers for growth, yield and reproduction which suggest a continued interest in output, we also observe markers related to more qualitative concerns such as meat quality (e.g. tenderness, fat content), congenital defects and disease resistance or susceptibility. In spite of the diversity they all relate to either decreasing costs or enhancing performance. It is important to appreciate the applied nature of animal science. That is to say it is considerably more tied to the economic sphere than most other science fields. Economic modelling plays an important role in the selection of traits and the shaping of research, and market goals act to constrain or enable the application of research. The actual impact of a discourse on sustainability (and the question of which discourse) on the developing trajectories of genomics remains to be seen.

Whilst some of the qualitative emphases to be found within markers and tests made possible by genomics research can be said to pertain to welfare and are discussed in such terms (Plastow 2006) they speak to the fuzzy indistinction between production and welfare discussed earlier. When the cost of disease to animal agriculture is put at £1.7 billion in the UK alone¹⁰ it is not surprising that this is identified as one important area where efficiency gains could be made. That genomics is seen as offering an advantage over conventional breeding in this area is significant to both its funding and general support. Other markers aim to be economically useful either through a further optimisation of productivity or by adding value qualitatively to be attractive to niche markets that express consumer preference for a particular taste or for more healthy animal products. However in terms of animal welfare genomics would seem to conform to a narrow emphasis on welfare as health and performance that can be spoken about in terms of a win-win but may exclude other definitions of welfare.

Although, as highlighted earlier, there is little need to boost production in Western Europe the global nature of farm animal breeding is very relevant to thinking about the potential impact of genomics and other molecular techniques on welfare. Future scoping documents on animal science and agricultural policy speak of a 'livestock revolution' which refers to an expected global increase in consumption of animal products of around 7% per year for the next 20 years largely in response to rising population levels in developing countries such as China and India (FABRE-TP 2005: 4). Whilst the assumption that such an increase is wholly demand driven or in the interests of human health should be deconstructed the point here for thinking about welfare is that productivism could be reinvented through the global elaboration of agricultural policy and politics. Furthermore molecular technologies are being cast as important techniques in this neo-productivism. These techniques which put forward an idea of life as mobile, exchangeable informational code and as amenable to standardisation also then fit well with goals surrounding the globalisation of markets (see Thacker 2005). Although it is commonly argued that Europe has high welfare standards (clearly a relative claim), such standards are not the same in other parts of the world. The sort of research into 'robust' animals discussed earlier is also seen as attractive in terms of global standardisation due to the aim of producing

¹⁰ This figure is from Bishop & Woolliams (2004: 914).

animals able to cope in a wide range of diverse environments. Indeed one might envisage a selected 'robustness' being an animal's main source of welfare with the concern being that animals will be selected to cope better with poor welfare conditions touched upon earlier.

This is a point of concern which has been made in relation to research into both 'robustness' and disease resistance. In a discussion around 'robustness' research one welfare scientist expressed that:

"There is a lot of interest in immuno-tolerance in animals. If people could crack the immune system of pigs for example so that they didn't get sick when you crowd them into buildings..."

A similar point was made in the FAWC report (2004) in relation to the development of genomics, specifically around markers for disease resistance. The report expressed the view that once commercialised production traits could take precedence.

FAWC recognises that the application of gene-mapping to selective breeding programmes may be used to rectify recognised welfare problems, for example, by selecting for specific health traits such as improved leg health in broilers. We are concerned, however, that with the considerable commercial competition between breed companies, the primary focus of attention will be for production-related traits (2004: 18).

It is naïve then to assume that commercialisation will necessarily either foreground sustainability or a notion of sustainability that includes welfare. On the disease resistance variety of genomics research the FAWC report said:

Whilst this will have obvious welfare benefits, it is important that the development of such strains is not used to disguise welfare threatening conditions which would otherwise produce disease and does not discourage the development of higher standards of stockmanship and provision of a good quality environment (ibid. p.19).

This expresses a concern over welfare geneticisation and the tension between a health model of welfare and one that foregrounds attention to conditions, to animal experience. If here we can see potential risks over the commercialisation of animal genomics, like conventional selection we can also point to some potential risks around the biology¹¹. One example of genomics commercialisation in the UK is the National Scrapie Eradication Plan which uses gene assisted selection to select for a haplotype that has been associated with scrapie resistance. Villanueva & Roughsedge point out three potential risks with the eradication plan (2006). First, a new transmissible spongiform encephalopathy (TSE) could arise which the currently favoured haplotype may not confer resistance to, second, the eradication programme may lead to lost attributes (i.e. 'bad' genes can be 'good' genes and vice versa) and, third, selecting exclusively on one line creates the potential for lost genetic diversity. Villanueva & Roughsedge conclude that the plan "*did not initially consider the wider quantitative genetic implication of its aim. That is the association of non-disease traits with the various targeted genotypes and the effect that the plan would have on the*

¹¹ I do not mean to imply biological risks as somehow isolated from either the sociality of science or the social and ecological embeddedness of animal bodies.

management of genetic variation within the sheep populations” (2006: 12). A process of sperm banking of rejected strains is advocated as an insurance against loss of genetic diversity. It would seem that genomics is as potentially subject to the unintended consequences that have been characteristic of the history of conventional breeding using non-molecular genetics.

This example, although the risks could turn out to be partly addressable through sperm banking, points to the possible dangers of adopting a narrow approach. If in this example we can note a concern of reductionism *within* genetic approaches it is also this point which structures concerns of animal welfare scientists over genomics. The interviews illustrated that for some animal welfare scientists there were philosophical disagreements with the shift to molecular genetics:

“Primarily my stance is that that whole paradigm is heavily reductionist. It is based on the purity reductionist approach to animals and my problem with that is, you know it’s not wrong but it’s a huge imbalance. And a claim of the objective science paradigm that that’s the only objective paradigm....An animal isn’t just a complex system it’s a being, a living being, a subject. And so where is the understanding of that animal? And you know another ethical term is integrity right, intrinsic value, which I think is very important. And so where is the knowledge to balance reductionist and where is, it’s nowhere to be seen”

Indeed this extract goes beyond the utilitarian ethics of welfare and begins to explore a richer ethical agenda inclusive of deontological ethics. If we accept that molecular approaches may be fostering a far more abstract and desocialised view of the animal (e.g. see Holloway 2005) we can note here a real difference in animal epistemologies at play. This is emphasised further if we look at the research methods employed by one of the animal welfare scientists interviewed. This foregrounds the interpretations of people working directly with animals in the form of asking for their descriptors of the animals’ welfare:

“I ask people to develop their own qualitative descriptors. So I don’t put it in their mouth, it’s really they have to observe the animals and come up with their whole animal descriptors. So terms like aimless, purposeless, bored, depressed, those descriptors came up in the intensive systems and the other systems, the enriched systems it was like playful, content, lively, purposeful, busy you know”

For this scientist the research was not only about constructing an alternative animal epistemology but also about valuing the knowledge of human/animal relations that farm workers possess:

“You can see that typically with knowledge transfer from scientists it is always from high up down and treating the people who work with the animals as if they don’t have knowledge”

This contrasts significantly with the molecular shift which eschews the ocular phenotypic knowledge of breeders as inferior to the interior gaze of molecular scientists (see Holloway 2005). The molecular turn puts its faith in the technological gaze and farm workers are conceived less as potential sources of knowledge more as potential obstacles to the application of genomics.

Conclusion

Although we should stress the diversity of positions within animal welfare science we can see, at least for some, rather stark epistemological, philosophical and political differences over the 'animal' vis-à-vis those implicit within genetics and genomics. These contestations of the animal are on the one hand a tension point in the ongoing dynamic of society-nature relations and conceptualisations; and on the other a prerequisite for thinking about both the possibilities and limitations of welfare in agricultural production. The concerns of this paper have been that these possibilities are potentially being narrowed and the limitations being exposed by an intensification of the 'animal' as abstract genetic code within a global neo-productivism.

The development of farm animal genomics and potentially other molecular techniques are a part of what Lang & Heasman have termed the 'life sciences integrated paradigm':

which relies on a simple re-interpretation of the existing productionist paradigm but claims to remedy a number of its limitations: from lessening environmental impacts, through improving human health from greater food production, to creating new products with enhanced, yet often contested, health benefits (2004: 22).

The discourses of genetics and genomics within these broader shifts of agri-food restructuring make claims on their positive effect upon animal welfare in the form of ideas such as the win-win. But if, as this paper argues, we can note both the narrowing of animal ethics to welfare *and* the subsequent narrowing of welfare to health within the politics of animal science then there are reasons to doubt that such restructuring will be amenable to an ethics or a welfare that can explore new animal epistemologies or new human/animal relationalities that are more respectful to nonhuman life.

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THE RISE OF AGRICULTURAL ANIMAL WELFARE STANDARDS AS UNDERSTOOD THROUGH A NEO-INSTITUTIONAL LENS

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Introduction

In recent years there has been an explosion of agricultural animal welfare standards. The rise of animal welfare standards has coincided with an increase in all types of standards (e.g. food safety, food quality, environmental standards) in the agrifood system. The emphasis on standards has occurred as regulation of agrifood systems has shifted. Whereas nation-states used to be the primary regulators of agrifood systems, the new agrifood terrain now includes, not only nation-states, but also global governance organizations, (e.g., World Trade Organization, WTO), multilateral and regional regulatory schemes, (e.g., the European Union, EU), and private sector organizations, including transnational corporations (e.g., Cargill and Wal-Mart) (McMichael 2004; Higgins and Lawrence 2005; and Scholte 2000).

As the organization of agrifood systems has shifted, standards¹ have become one of the most significant emerging practices for governing food (Bain, Deaton, and Busch 2005; Higgins and Lawrence 2005). Economists have typically highlighted the role standards play in helping to reduce transaction costs, increasing the predictability of a product, and in general, simplifying what could be a very tedious and complicated process. With the increasing importance of standards, however, a shift has occurred from the use of standards as technical tools for market homogeneity to the use of standards as strategic tools for accessing markets, coordinating systems, enhancing quality and safety assurance, product branding, and creating niche markets (Giovannucci and Reardon 2000; Reardon et al. 2001).

As global agriculture restructuring has occurred and the importance of standards have been recognized, scholars have raised concerns surrounding the distributional benefits of standards, especially for developing countries, small scale producers (in developed and developing countries), and farmers utilizing alternative production systems (Bain et al. 2005; Dolan and Humphrey 2000; Dunn 2003; Freidberg 2004; Reardon and Farina 2002; Unnevehr and Roberts 2004). In particular, this growing body of research has highlighted the following: the rise of different types of standards, the lack of opportunity for specific groups to participate in standard setting, the high costs associated with standards adoption, and the elevation of standards that require adherence to specific forms of production and processing in agrifood systems. Much of this later work on standards has come out of a political economic tradition, and this literature has provided empirical evidence regarding the disproportionate distributional benefits emanating from standards and the role that powerful actors have in setting standards (Bingen and Busch 2006; Busch et al. 2005; Freidberg 2004). However, still absent is an organizational analysis of agrifood standards and the role that institutions play in shaping agrifood standards. This article incorporates sociological neo-institutionalism in an effort to

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¹ “Standards are documented criteria or specifications, used as rules, guidelines or definitions of characteristics, to ensure consistency and compatibility in materials, products, and services. In use, standards become measures by which products, processes and producers are judged” (Bain et al. 2005, 81). Standards for animal agriculture tend to focus either on food safety or product attributes, which generally encompass quality concerns like meat tenderness or animal welfare issues (Ransom 2006).

provide a more nuanced understanding of the current political economic theorizing about agrifood standards. Specifically, neo-institutionalism provides a new theoretical lens to help explain the recent growth in agricultural animal welfare standards that allows for the recognition of the role that institutions, not solely individual actors, play in shaping the creation and adoption of standards.

Historically, standards in most national food sectors have focused on what are called product (or performance) standards, that is the composition (e.g., shape, color, etc.) of the final product and/or health features of the product (e.g. pesticide residues, contaminants, etc.), all of which are easily measured in the end product (Hannin, Codron, and Thoyer 2006). In much of the recent standards literature, the explanation for the emergence of food safety (or product) standards has to do with the decline of nation-state regulation combined with the many well-publicized food safety scares that have occurred in various countries (e.g., BSE - bovine spongiform encephalopathy, E-Coli contaminated meats and vegetables, and dioxin-contaminated chicken). Thus, in order to reassure consumers of the safety of food products, countries and companies have imposed more stringent food safety standards. However, consumers are also called upon as the explanation for the increase in animal welfare standards and, more broadly, quality standards. Quality standards, (i.e., organics, fair trade, animal welfare) as opposed to food safety standards (i.e., pesticides residues, contaminants), are processed based standards. This means that the focus is on how the product is produced, with definitions of quality revolving around shared, socially constructed values (such as environmental conservation or regional characteristics) (Renard 2005). Moreover, quality standards are voluntary standards, and it is argued that industry leaders adopt voluntary quality standards due to consumer demand, or at the very least, to allow retailers to differentiate products along lines that appeal to consumers, such as animal welfare, environmental sustainability, and worker welfare (Hatanaka, Bain, and Busch 2005).

Yet, there are several aspects of animal welfare standards that challenge the notion that these standards are due solely to consumer demand. First, animal welfare standards increase the cost of production, and thus most companies that adopt voluntary animal welfare standards would seemingly do so with the expectation that the consumer is willing to pay for the perceived quality content.² For example, EU studies of the cost of production for chickens utilizing animal welfare standards in Europe have estimated increased costs in production from 5 to 50 percent, depending upon the types of changes made, such as reduced stocking density, size of cage, and raising chickens outdoors (Moynagh 2000 citing EU Scientific Committee reports). Yet, several studies of Western industrialized countries reveal that the number of consumers that are willing to pay more for improved animal welfare remains limited (see for example European Commission 2002; Mitchell 2001), and the more processed the product the less concerned consumers are about the issue (Moynagh 2000). Another explanation for the adoption of animal welfare standards, which is also linked to consumer demand, is the idea that an organization needs to “maintain a positive image or at the very least avoid negative publicity” (Renard 2005: 420). While there is certainly evidence to support this explanation, the consumer argument relies on the assumption that consumers purchase products that are aligned with their value systems. Building on previous literature that has correctly pointed out that consumer values and actions are not always aligned (Swidler 1986; Wright 2005), this article argues that an understanding of consumer values and action is necessary, but insufficient to understand the responsiveness of organizations to agricultural animal welfare standards. As such, this article will make use of neo-institutionalism (Powell and DiMaggio 1991) to better

² A minimum level of animal welfare standards will actually reduce costs in animal production and processing, but most animal welfare standards being proposed today target a higher level of animal welfare than the minimum required by law (see Grandin 2001).

understand the rise of agricultural animal welfare standards, and more generally to provide a guide for recognizing the ways in which institutions shape the actions of organizations.

Neo-institutionalism is briefly elaborated on below, followed by a discussion of institutional isomorphism as described by DiMaggio and Powell (1991b). Woven into the institutional isomorphism discussion is an analysis of agricultural animal welfare standards. Specifically, the World Animal Health Organization, private food retailers use of third party certification and corporate social responsibility reports, and the increasing emphasis placed on science of animal welfare will be discussed as it relates to agricultural animal welfare standards. The conclusion elaborates upon the ways in which institutional isomorphism can provide a more robust understanding of the rise of agricultural animal welfare standards and provide a guide for future studies related to agricultural standards.

Neo-Institutionalism

Neo or the “new” institutionalism, as a theoretical framework, has been used in many diverse settings including, but not limited to economic works by Douglass North (1990) and Oliver Williamson (1985), economic sociologists (e.g. Fligstein 1996; Granovetter 1985; White 1981), organizational theory (Scott 2001) and in historical comparative analyses (Evans 1995). Institutions are defined as intersecting social structures consisting of loosely bounded constellations of symbolic (i.e. codes, conventions, scripts) and material or behavioral (i.e. rituals, habits, practices) forms (Conrad 2006; Friedland and Alford 1991). Neo-institutionalists stress that while institutions provide structure to everyday life and guide human interaction, behavior of individuals and organizations must be explained on a situational basis, as behavior is deeply rooted in the cultural, political, and legal frames that the institutions are situated within (North 1990; Scott 2001).

As with any theory, neo-institutionalism is not without its critics. Specifically, sociological neo-institutionalism has been critiqued for reducing agency to enactment and neglecting power and group conflict (Colomy 1998). Yet, several scholars have recognized the value of neo-institutionalism in sociology and have attempted to integrate and further the ideas of neo-institutionalism, for example Granovetter’s embeddedness (1985), Fligstein’s construction of a field (1996), and Barnett and Finnemore’s organizational analysis of global economic governance institutions (1999). To date the use of sociological neo-institutionalism within agrifood studies has been limited, yet neo-institutionalism fits well with political economic agrifood studies. While political economic perspectives provide the ability to recognize that economies are embedded in political and social relations, neo-institutionalism furthers our ability to appreciate the different ways in which institutions provide substantive guides for practical action. Moreover, neo-institutionalism draws attention to the manner in which organizations are influenced by and imitate each other to promote success (Clemens and Cook 1999; Dobbin 1994; Powell and DiMaggio 1991; Taplin 2006).

A Neo-Institutionalist Analysis of Agricultural Animal Welfare Standards

Any analysis of standards must begin with a brief discussion of The World Trade Organization (W.T.O.), as the operation of the WTO and its standard setting bodies have contributed to the importance placed upon standards in the agrifood system. The World Trade Organization (W.T.O.) was created in 1995 as a permanent institution administering several international trade agreements and dealing with cases of international trade disputes (Spriggs and Isaac 2001). The goal of the W.T.O. is to facilitate trade for producers of goods and services, importers, and exporters. The creation of the W.T.O. effectively gave “more teeth” to trade dispute settlement procedures (Victor 2000). Under the W.T.O. there are two agreements

that are most relevant to agriculture and food products, which are the Technical Barriers to Trade (TBT) and the Sanitary and Phytosanitary (SPS) Agreements. The SPS agreement focuses explicitly on food safety issues, while the TBT agreement is broader in scope, pertaining to any internationally traded product. The WTO's SPS Agreement explicitly recognizes three international organizations (commonly referred to as the "three sister" organizations) that develop international standards, guidelines and recommendations for food and agriculture. One of the three sister organizations, the *World Animal Health Organization* (OIE),³ develops standards for animal health.

In 2005, the OIE officially adopted agricultural animal welfare guidelines, marking the first time a global governance organization has provided guidance on the issue. The guidelines focus on slaughter for human consumption, land and sea transport of animals, and humane euthanasia of animals for disease control purposes. The significance of the OIE adopting animal welfare guidelines is linked to the fact that as one of the three sister organizations, the OIE serves as reference point for rulings in WTO dispute settlement cases.⁴ The moment the WTO identified the OIE as one of the three sister organizations was the moment in which the institutional arrangements of animal agriculture changed.

For our purposes, the elevation of the OIE to international rule maker, is key in understanding the ways in which institutions complicate and constitute the paths by which solutions are sought (DiMaggio and Powell 1991a). OIE provides an international forum for discussion and debate surrounding animal standards. With the establishment of the OIE as one of the three sister organizations, all countries and organizations became more attuned to the dialogue occurring within the OIE. For example, reporting on the first OIE global conference on animal welfare in Paris, France in February 2004, someone from a U.S. non-profit agricultural industry supported group writes:

The three most important points to animal agriculture in the USA, and to many other countries outside the European Union, that arose from the meeting are:

- The OIE will establish international guidelines for animal welfare starting with farm animals;
- Confinement and transportation will be major issues; and,
- Many expect the EU to use animal welfare as a factor in trade negotiations.

If the World Trade Organization ultimately adopts the OIE's recommendations, the OIE guidelines will serve as the basis for international trade. Additionally the OIE anticipates its recommendations will lend support for developing relevant legislation in the countries that do not yet have animal welfare regulations. (Johnson 2004)

Due to the position of the OIE in relation to the WTO, the potential power of animal welfare standards have been elevated within economic and government institutions. The OIE creates an arena within which organizations and governments exchange ideas and experience conflict

³ OIE was previously known as Office International des Epizooties.

⁴ OIE standards and guidelines are not equal to national legislation, but rather are viewed as recommendations to national governments. However, there is an advantage for countries that choose to adopt the OIE's standards, guidelines and principles into national legislation. Effectively, the standards promulgated by the three sister organizations provide a so-called "safe harbor" for countries. Safe harbor refers to the idea that measures based on international standards, guidelines or recommendations developed by each of the three sister organizations are presumed to be consistent with the SPS Agreement, and Members who base their measures on them can be confident of their compliance with the SPS Agreement.

over the topic of agricultural animal welfare, but more importantly, the interactions that occur in the OIE cement what DiMaggio and Powell (1991b: 65) refer to as an organizational field—organizations in the aggregate that constitute a recognized area of institutional life (e.g., key suppliers, regulatory agencies, and other organizations that produce similar services or products).⁵

Recognizing an organizational field allows us to begin to understand the emergence of animal welfare standards across a wide range of organizations, as DiMaggio and Powell (*Ibid*) explain, “once disparate organizations in the same line of business are structured into an actual field...powerful forces emerge that lead them to become more similar to one another.” This point can be made clear by examining Table 1 where it is notable that many of the agricultural animal welfare standards have emerged during the same ten-year period. The rise of agricultural animal welfare standards can best be explained by DiMaggio and Powell’s concept of isomorphism — constraining processes that force one unit in a population to resemble other units that face the same set of environmental conditions. Specifically, institutional isomorphism focuses on the fact that organizations compete not just for resources and customers, but also for political power and institutional legitimacy.

DiMaggio and Powell further specify three mechanisms through which institutional isomorphic change occurs. These three are coercive, mimetic, and normative. Since all three can be seen within agrifood organizations, each mechanism will be discussed and directly related to animal welfare standards. For our purposes each institutional isomorphic mechanism will be discussed as a discrete entity and linked to specific cases of agricultural animal welfare standards, however, in reality, these three mechanisms can, and often do, overlap.

Coercive isomorphism stems from political influence and the problem of legitimacy. This type of isomorphic mechanism results not only from both formal and informal pressures exerted on organization by other organizations upon which they are dependent, but also by cultural expectations in the society within which organizations function. Within the agrifood context there are several examples of explicit imposition of organizational animal welfare standards on dependent organizations, the most notable of which involves Third Party Certification (TPC) of suppliers required by food retailers. TPC and third-party certifiers are “private or public organizations responsible for accessing, evaluation, and certifying safety and quality claims based on a particular set of standards and compliance methods” set by agrifood organizations (Hatanaka, et al. 2005: 355, citing Deaton 2004). The power of food retailers to set standards has increased in the past decade as the market share controlled by a few dominant retailers has increased. For example between 1993 and 2000, the market share of the top five retailers in France increased from 48 to 61%, in Italy from 11 to 25% and in the U.S. from 20 to 40 % (Busch and Bain 2004).

One of the more recent and well-known examples of a certification scheme is GLOBALGAP, which until recently was known as EurepGAP (Euro-Retailer Produce Working Group for Good Agricultural Practices).⁶ GLOBALGAP focuses on farm certification standards, with the intention of ensuring safe food that is produced respecting

⁵ The process of institutional definition of fields is characterized by “an increase in the extent of interaction among organizations in the field; the emergences of sharply defined interorganizational structures of domination and patterns of coalition; an increase in the information load with which organizations in a field must contend; and the development of a mutual awareness among participants in a set of organizations that they are involved in a common enterprise” (DiMaggio and Powell 1991, 65).

⁶ GLOBALGAP was announced as the new name of EurepGAP in September 2007. GLOBALGAP intends to reduce confusion and the number of audits required by streamlining the GAP standards required for producers.

Table 1: Examples of Private Sector, NGO, and Public Sector Agriculture Animal Welfare Policies and Guidelines

Organization	Position in Industry	Year*	Applied Region
EurepGAP	All the major European food retailers	1997/2004	EU (Belgium, Finland, Germany, Netherlands, U.K.) & Switzerland
Freedom Food - Labeling Scheme		1994	U.K.
Certified Humane - Labeling Scheme		1998	United States (U.S.)
Free Farmed - Certification & Labeling		2000	U.S.
Private Sector		Year	Applied Region
<i>Fast Food Chains (FFC)</i>			
McDonald's	Largest FFC	1999	Global – locations that have McDonalds
Burger King	2 nd Largest Burger FFC	2001/2007	Global – locations that have BK
KFC (a part of Yum! Brands)	Largest chicken FFC	2003	
Wendy's International	3 rd Largest burger FFC	1998/2001	
<i>Grocery Retailers</i>			
Ahold	3 rd Largest	2003	The Netherlands & subsidiaries in U.S. and Europe
Kroger	4 th Largest	2001	U.S.
<i>U.S. Packers</i>			
Tyson Foods	1 st for Beef & Chicken	2003	North America
Cargill	2 nd in Beef	2007	North America – notified an animal rights group phasing out sow gestation crates for the past four years.
Smithfield Foods	1 st in Pork	2003/2007	North America 2007 phase out gestation crates
ConAgra Foods	3 rd in Beef and Pork (co-owned Swift & Co.)	2001	North America – adopted Food Marketing Institutes (FMI – an industry group) animal welfare guidelines; Developed in-house guidelines for Turkeys.
International Organizations		Year	Applied Region
OIE		2005	Global
Regional & National Governments		Year	Applied Region
European Union - Treaty of Amsterdam		1997	All EU members
United Kingdom <i>The Welfare of Farmed Animals</i>		2000	U.K.
Swedish Animal Welfare Act; Swedish Animal Welfare Ordinance		1988	Sweden - the most stringent agricultural animal welfare regulations in the EU

* If two years are listed, the second year signifies when the organization created stricter animal welfare standards. The year listed indicates the date of implementation of animal welfare standards, although some companies do not make implementation date available (e.g. Wendy's International).

worker health, safety and welfare, environmental and animal welfare (EurepGAP.org). The Euro Retailer Produce Working Group initiated EurepGAP in 1997. Originally made up of a group of 13 of the largest European retailers including, Royal Ahold, Marks & Spencer, Tesco, Safeway, and Sainsbury, the mission of EurepGAP was to develop a harmonized standard for Good Agricultural Practices (GAP), together with a third party certification (TPC) system for the production of fresh fruit and vegetables.⁷ GLOBALGAP now has certification programs for three areas, one of which, the Integrated Farm Assurance, includes a sub area that engages with animal welfare for cattle and sheep, dairy, poultry, and pigs. In the future, GLOBALGAP intends to expand their animal welfare guidelines, which will also expand to aquaculture. However, in the past several years NGO (non-governmental organization) groups lobbied EurepGAP/GLOBALGAP to slow their implementation of their standards arguing that too many small farmers, especially in developing countries, would be harmed by their inability to meet the stricter criteria required by EurepGAP retailers (see Graffham, Karehu, and Macgregor 2006). In response EurepGAP agreed to slow the implementation of their required standards. Beyond altruistic motives, it should be emphasized that if EurepGAP could not source enough products because so few producers met their standards, then the legitimacy of EurepGAP would be compromised.

The above example of the implementation of TPC by a powerful retail organization is an example of coercive isomorphism in the form of organizations exerting formal pressure on other organizations. National regulations that companies must comply with also represent coercive isomorphism. However, in the case of animal welfare guidelines, most organizations' animal welfare standards are more stringent than national regulations. Yet, many companies acknowledge national regulations in their own animal welfare policies as a means of gaining legitimacy with national governments and the corresponding national public. This is an example of coercive isomorphism occurring by way of cultural expectations. Ultimately, there is a need for organizations to lodge managerial authority and responsibility, at least ceremonially, in a formally defined role in order to interact with other hierarchical organizations. Evidence of this more cultural type of coercive isomorphism can be found in company Corporate Social Responsibility (CSR) reports. While there is no consistent definition of what is meant by CSR, they typically attempt to engage with the 'triple bottom line' of economic, social, and environmental performance (Busch et al. 2005; Maloni and Brown 2006). Thus, private food retailers publish CSR reports as a way of informing stakeholders of the issues they are addressing beyond simply putting food on the supermarket shelf. For example, Table 2 provides a comparison of the animal welfare sections of two major companies' CSR reports (U.K. based Marks and Spencer and U.S. based Smithfield Foods). Both of the CSR reports make reference to national definitions of animal welfare. In the case of Smithfield, reference is made to the U.S. Humane Methods of Slaughter Act 1978, while Marks & Spencer makes reference to the five freedoms (discussed further below) that emanated from the U.K. government appointed committee in 1979.

As part of the creation of legitimacy within coercive isomorphism, TPC and CSR reports are often closely linked. In order for a company to make claims about animal welfare within a CSR report, the company often carries out third party certification schemes to assure stakeholders (i.e., consumers, government officials, and other companies) that practices such as animal welfare are actually being followed within the food supply chain. However, CSR reports do not require certification schemes, so the two initiatives do not have to be coupled.

⁷ The Euro Retailer Produce Working Group agreed to work together to develop EurepGAP as a benchmark standard in order to avoid a situation where suppliers have to be separately certified for multiple retailers (USDA/FAS 2001).

Table 2. Excerpt from Corporate Social Responsibility Reports on Animal Welfare

Company	Corporate Headquarters	Excerpt from Animal Welfare Policy/Principles
Smithfield Foods, Inc.	Virginia, USA	<p>Smithfield Foods, Inc. and all its subsidiaries involved with the production or processing of live animals are required to provide:</p> <ul style="list-style-type: none"> • Comprehensive written animal welfare programs to ensure animal well-being. • Shelter that is designed, maintained and operated to provide a physical environment that meets the animals' needs. • Access to adequate water and high quality feed to meet animal nutrition requirements (production facilities) and in accordance with the <i>Humane Methods of Slaughter Act 1978</i> (processing facilities). • Humane treatment of animals which meets or exceeds the requirements of the <i>Humane Methods of Slaughter Act of 1978</i>, and all applicable American Meat Institute Animal Handling Guidelines (processing facilities).
Marks & Spencer	London, United Kingdom	<p>Marks & Spencer aims to ensure that wherever animals are used in the production of our products, their welfare is protected and that wild animal populations are used sustainably. Specifically for Marks & Spencer food products, it is our aim to ensure that all animals' welfare is protected by:</p> <ul style="list-style-type: none"> • Working with farmers who share our attitude and approach to animal welfare. • Adopting the recommendations of the <i>Farm Animal Welfare Council</i> including ensuring that farming systems meet as many of the <i>five freedoms</i>* as possible. (*the five freedoms are; i. Freedom from hunger and thirst, ii. Freedom from discomfort, iii. Freedom to express normal behaviour, iv. Freedom from pain, injury and discomfort, v. Freedom from fear and distress)

Mimetic isomorphism results from uncertainty within the environment in which organizations operate. DiMaggio and Powell (1991b: 69) argue that organizations may model themselves on other organizations when organizational technologies are poorly understood, goals are ambiguous, or when the environment creates symbolic uncertainty. Agriculture animal welfare standards provide one of the best examples of an uncertain environment, both in terms of not having an agreed upon definition of agricultural animal welfare, nor fully understanding the best techniques for ensuring adoption and compliance to animal welfare standards.

As animal welfare standards have become part of a global conversation surrounding agriculture trade, there has been a greater emphasis on the sentience of animals and the science behind animal well-being. Increasingly, within international organizations' like the OIE and in regional and national legislation there is an understanding of animals as sentient beings, not solely as commodities to be owned and traded (Farve and Hall 2004). The foundation of legally recognizing animals as sentient beings actually began almost thirty years earlier when Ruth Harrison published *Animal Machines* in 1964 in the U.K. (Wolfson 1996). Due to Harrison's work, the Brambell Committee, appointed by the British government, examined the

conditions in which livestock were kept within systems of intensive husbandry. The committee was charged with assessing whether standards ought to be set in the interest of animal welfare. Emanating from the Brambell Committee were the five freedoms of animal welfare. These five freedoms were to be considered for all agricultural animals regardless of their location in the industrial agricultural process (i.e., on the farm, in transit, or at the point of slaughter). The five freedoms include: freedom from hunger and thirst, freedom from discomfort, freedom from pain, injury, disease, freedom to express normal behavior, freedom from fear and distress (Farm Animal Welfare Council 1979). Although the five freedoms were never given the force of law (Wolfson 1996), the U.K., other European countries, and the EU relied heavily on the five freedoms in drafting animal welfare legislation over the past thirty years.

The recognition of animals as sentient beings came to a peak when the EU signed the Treaty of Amsterdam in 1997 which recognized animals as sentient beings and required that animal welfare be considered when policies relating to agriculture, transport, and research are formulated or implemented by any of the EU member states (Hirsch 2003). Despite a decade or more of animal welfare advocates fighting to redefine the status of animals within the EU, the Treaty of Amsterdam was the first EU document that not only recognized animals as sentient beings, but also made the treatment of animals legally binding.⁸ Today, despite the EU having passed the Treaty of Amsterdam there continues to be a tension between viewing agricultural animals as inputs to the food system versus as sentient beings that deserve equal protection under the law (refer to Miele, Murdoch, and Roe 2005 for an analysis of EU animal welfare regulation). The shift in legal recognition of animals represents divergent paradigms regarding animal protection. Generally, the animal rights perspective argues that humans should not dominate over animals, while the traditional welfare perspective does not counter human domination, but argues that humans should show concern for animals' physical and emotional health (see Buller and Morris 2003; Francione 1996; Lubinski 2004 for more information). Animal welfare as an object of governing within agriculture is still in the process of clarification (Miele et al. 2005: 182).

Correspondingly, there is considerable disagreement over the science of animal welfare and over the techniques that should be employed to ensure adequate welfare among agricultural animals. Not coincidentally, there is an emphasis on science within the WTO's SPS and TBT Agreements. The WTO cannot be credited with causing the increased focus on science in animal welfare discussions. Rather the WTO is a part of a global trading system that promotes rationalization and efficiency and the appeal to scientific values like objectivity and transparency are one means to achieve these goals (Hatanaka et al. 2005). In order to successfully reduce trade barriers, it is important that the WTO rely upon "objective measures" and not on cultural variables or other factors that would effectively limit trade. For example the SPS Agreement specifically privileges trade rules based in science. Article 2, Paragraph 2 under the SPS Agreement states:

Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is **based on scientific principles and is not maintained without sufficient scientific evidence**, except as provided for in paragraph 7 of Article 5.⁹ [emphasis added] (WTO SPS Agreement 1995)

⁸ The Treaty of Rome (1957) created the European Economic Commission (EEC) and in the text of the Treaty animals are defined as agricultural goods. Over the years many proposals were made, but none successfully, to change the way animals are defined in the Treaty of Rome (European Biomedical Research Association 1997).

⁹ Article 5, paragraph 7: In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information, including that from the relevant international organizations as well as from sanitary or phytosanitary measures applied by other Members.

Despite the strong emphasis on scientific evidence, the science surrounding animal welfare remains inadequate. Currently, the U.S. government uses health indicators (e.g., presence of illness) to measure animal well-being, whereas the EU government relies upon health, productivity, physiology, and ethology (e.g., comparison of animal behavior in an intensive farming situation with normal behavior) (Moynagh 2000). Within the private sector there is also a fair amount of debate over animal welfare and best practices for producing animal welfare. In the U.S. Temple Grandin, a prominent animal scientist and a major participant in constructing animal welfare standards for fast food restaurants, argues there are five key measurements inspectors need to follow in order to ensure animals receive humane treatment at slaughtering plants (Grandin 2005). These include: accuracy of stunning animals, amount of vocalization by the animals prior to slaughter, insensibility and unconsciousness on the bleed rail, amount of electric prod use by staff, and the number of animals that trip or fall. However, there are many other actors within and outside the industry in the U.S. and in Europe that argue that there should be many more measures to be followed. The infighting and contested terrain of animal welfare standards within an industry at the point of slaughter is symbolic of the types of arguments that occur in international trading arenas between countries, particularly when the conversation is expanded to include production techniques. Among the issues debated for domesticated animals internationally include adequacy of space for the animals to move around and types and amount of feed the animals consume. One group working on agricultural animal welfare is a diverse group of researchers working on a large EU funded project entitled “Welfare Quality Project.” One aim of the project is to develop a monitoring system for good farm animal welfare. To this end, “there are more than 30 researchers involved in this sub-project to ensure that the scheme has a good scientific basis” (Keeling n.d.). However, the group notes that regardless of the scientific principles utilized, for a monitoring scheme to be widely accepted and implemented in practice, the scheme “has to satisfy public, industry and political views of animal welfare” (*Ibid*).

Clearly, the practices of agricultural animal welfare remain contested. This includes the uncertainty over consumer reaction and willingness to pay for more stringent animal welfare standards. Thus, in situations of uncertainty, organizations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful. This can best be seen within the fast food retail sector where the number one fast food chain globally, McDonald’s, was the first to implement animal welfare standards and audits for all suppliers (Zwerdling 2002). Shortly thereafter the other major fast food chains followed McDonald’s lead, including Wendy’s, KFC (formerly Kentucky Fried Chicken), and Burger King. A similar trend can be seen among global grocery retailers and a less public shift in animal welfare standards among major U.S. pork, chicken and beef packers. According to one industry group representative, many U.S. companies on the production side of animal agriculture have not publicized their shift in animal welfare policy in part due to the uncertainty of the types of animal welfare standards that will become the standard to follow and consumer willingness to pay extra for meat that comes from animals raised utilizing more stringent animal welfare standards (personal communication 2007, see for example Cargill in Table 1).

This raises the point that there is also a ritual aspect to mimetic isomorphism, in that companies adopt these innovations to enhance their legitimacy. The adoption of innovations may or may not reflect the actual work of the companies. Meyer and Rowan (1991) note that conformity to institutionalized rules tends to contrast with efficiency criteria of an organization, yet institutionalized rules provide ceremonial conformity and legitimacy. Animal welfare

In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

standards can run counter to profit maximization and increased efficiency of livestock production facilities (i.e., the increased costs of production and consumer unwillingness to pay for such standards). From the very earliest days of industrialization, techniques for meat production and slaughtering were developed based on ideas of factory production. In other words, an assembly line process with a greater division of labor that increased efficiency served as an ideal model of how to advance the agricultural industry, and farm animals became sites for capitalist accumulation through processes of selection, breeding, and intensive husbandry (Buller and Morris 2003). The technologies and methods used in meat production reflected industrial societies' interest in increasing control of animals and humans (Burt 2006). Due to the success of an assembly line approach to meat production, Western industrialized societies are able to raise and slaughter animals on a scale not previously imaginable. For example in the United States, it is common in large slaughterhouses for 300 cattle an hour to be slaughtered, with the rate of cattle killed every twenty-four hours in the U.S. around 100,000 (Burt 2006). The size of the slaughter facility is often criticized as it relates to animal welfare due to the large number of animals that: are held in holding pens, are exposed to extreme temperatures in holding areas, and experience elevated stress levels due to transportation and handling of animals upon arrival at the slaughter facilities.

Table 3 displays the overall increase in the quantity of live animals exported globally in the past thirty years.¹⁰ Live animal trade is highlighted because trade in live animals represents the proverbial tip of the iceberg, as companies prefer to move meat in processed form.¹¹ Thus the increase in live animal trade over the past thirty years is reflective of the overall increase in consumption of meat products globally. Consumption rates reveal that the developed world (Western, industrialized countries) will increase meat consumption from eighty-eight million metric tons in 1988 to a projected one-hundred and fifteen million metric tons by 2020, while the developing world is estimated to more than triple their meat consumption from fifty million metric tons in 1983 to a projected one-hundred and eighty-eight million metric tons in 2020 (Delgado et al. 1999).¹² In addition, live animal trade represents one of the more inhumane practices in animal agricultural production. Live agricultural trade usually involves long shipment periods in which animals, usually onboard cargo ships, are exposed to overcrowded confinement (where animal diseases more easily spread), poor ventilation, and extreme temperatures (Millstone and Lang 2003; Wright and Muzzatti 2007).¹³ Thus, viewing agriculture animal welfare standards within a broader political economic perspective can enable us to better understand the neo-institutionalist point that rules can provide ceremonial conformity and legitimacy, but have the potential to **not** actually reflect the demands of the work environment (DiMaggio and Powell 1991a; Meyer and Rowan 1991).

Finally, *normative isomorphism* is the pressure brought about by professions. Formal education and legitimation in university specialists and the growth and elaboration of professional networks that span several organizations are two aspects of professionalization that are important to normative isomorphism. Historically, university specialists (particularly animal scientists) have played a significant role in shaping the lives of agricultural animals. The history of university specialists' engagement with animals and animal welfare is grim.

¹⁰ The Europeans are seen as more agricultural animal welfare friendly, yet approximately two million live pigs, cattle, sheep and horses are transported around Europe annually. For example, approximately 1.5 million pigs are exported annually from the Netherlands to Italy and Spain for slaughter or further fattening, due partially to the strict anti-pollution laws in the Netherlands (see Millstone and Lang 2003).

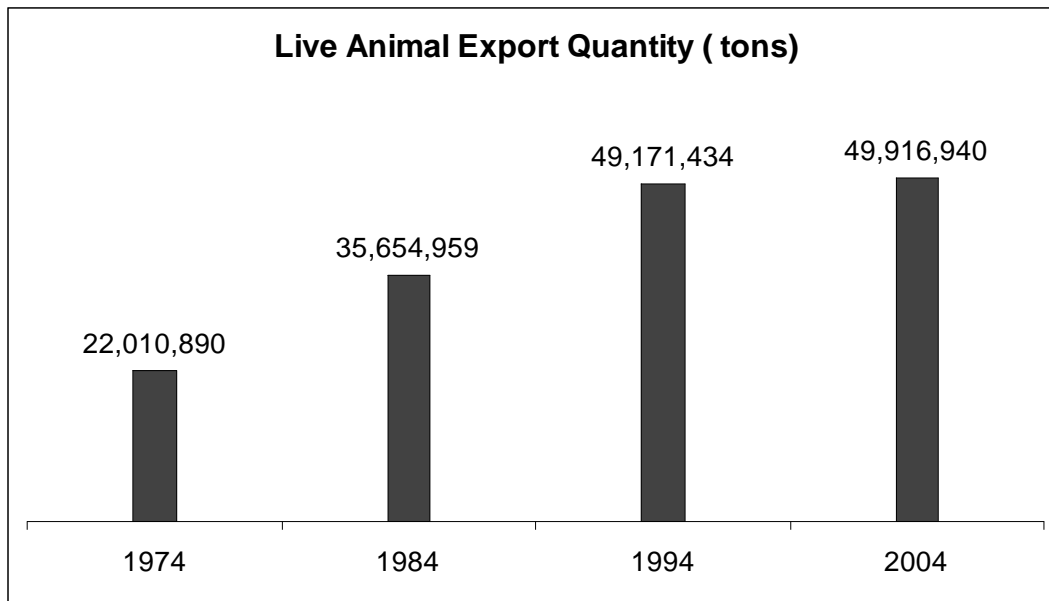
¹¹ It takes four times as many resources to transport live animals than to transport meat (Millstone and Lang 2003).

¹² In developing countries, population growth, urbanization and income growth are identified as key factors that have contributed to the major increase in demand for food of animal origin (Delgado et al. 1999).

¹³ In the 1990s several cargo ships carrying live animals caught fire and sunk killing anywhere from 40,000 to 70,000 sheep each time (see Wright and Muzzatti 2007).

Within sociological texts animals have largely remained invisible and the interactions between humans and animals ignored (Tovey 2003). More broadly within the natural sciences, animals have been seen as inferior and separate from human activities and human qualities, such as the capacity to have emotions (Haraway 1989; 1991; Ritvo 1987; Siebert 2006). While there have long been critics of animal treatment within agriculture, most critics have been situated outside the university (e.g., NGOs). Being situated outside the university means that claims made by animal welfare activists are often ignored as illegitimate sources of knowledge (refer to Harding 1991 for an elaboration of what counts as legitimate knowledge).

Table 3. Thirty Years of Live Animal Export



Source: FAO Statistics Division 2007

However, in recent years the knowledge surrounding the science and technology of animal welfare has become contested terrain. People and organizations that are situated within university settings and professional networks will continue to be the primary definers of what is considered legitimate knowledge surrounding animal welfare. Yet, due in part to the elevation in the importance of the OIE, and, therefore, the creation of an organizational field (organizations in the aggregate that constitute a recognized area of institutional life) around animal agriculture, the conversation surrounding animal welfare has shifted. Beginning in the 1990s university courses focused on animal welfare and animal rights began being offered across many different disciplines. One can now find courses focused on animal welfare/well-being, animal rights, and animal sentience in over forty states in the U.S., in addition to courses offered in Canada and Spain (CRLE 2007). Furthermore, the shift to focusing on animal sentience (as opposed to animal behavior) among professional animal scientists will continue to reshape the way agricultural animal welfare is discussed (CIWF 2006). In addition, there is new grant funding available nationally and regionally to support academic research on agricultural animal welfare standards (e.g. the EU funded project “Animal Welfare Quality”). Finally, the formation of an organizational field facilitates the ability of a variety of organizations, not only university specialists, but also NGO personnel, to enter into a conversation about agricultural animal welfare standards. Of the three types of isomorphism, normative isomorphism makes up the smallest component of a neo-institutionalist analysis of agricultural animal welfare standards and yet, has the potential to redefine the conventions and practices surrounding animal agriculture.

Conclusions and Implications

According to DiMaggio and Powell, for all three types of isomorphic mechanisms, isomorphism will proceed even if there is an absence of evidence that it increases internal organizational efficiency. While some voluntary agricultural animal welfare standards can work well within the model of efficiency that much of the Western industrialized farming world relies upon, there are many other animal welfare standards that do increase costs of production (e.g., size of holding pens, use of anesthetic during castration or dehorning), with no assurance that organizations or individuals will receive a premium for their product (e.g., see Moynagh 2000). If it is understood that organizations are often rewarded for their similarity to other organizations in their fields because it becomes “easier for organizations to transact with other organizations, to attract ... staff, to be acknowledged as legitimate and reputable, to fit into administrative categories that define eligibility for public and private grants and contracts,” all of which are important rewards for any organization (1991b: 73), then we begin to understand why so many organizations have adopted agricultural animal welfare standards in recent years.

Thus, utilizing a sociological neo-institutional perspective provides a framework for more fully understanding the rise of agricultural animal welfare standards. While consumer demand is a factor in the rise of agricultural animal welfare standards, there are other factors at work within the agrifood system. Moreover, neo-institutionalism allows us to recognize the ways in which institutions define the solutions to agricultural animal welfare. Neo-institutionalism also signals to scholars that some solutions are forgone because they are not even in the realm of possibility within the current institutional framework and organizational fields. Indeed this article has outlined some of the organizations that have adopted animal welfare standards for food animals, but future analyses could focus on the ways in which institutions shaped the discourse and practices of agricultural animal welfare standards within these organizations. Such an approach would further an analysis of the ways in which particular practices dominate at the expense of other types of practices within organizations. An analysis of this sort would also allow for an examination of the discourse and practices that are so central to the maintenance and legitimacy of institutions that they remain unchallenged at the public level (Conrad 2006).

A neo-institutional analysis highlights the distinction that should be made between the formal structure of an organization and its actual day-to-day activities (Meyer and Rowan 1991: 42). Thus, while there are several scholars researching the certification (TPC) programs being implemented by private retailers, it appears important to continue to revisit the on-going *practice* of agricultural animal welfare standards (and other quality/process standards), not simply the initial implementation of the standards. As neo-institutionalism suggests the organizational form has the potential to take precedence over the content. This seems especially important as it is likely a growing proportion of the Sanitary and Phytosanitary (SPS) measures within the World Trade Organization will be focused on process standards (e.g., animal welfare or other production techniques), which as highlighted earlier are much harder to observe and measure in the final end product (Unnevehr and Roberts 2004). Ultimately, acknowledging institutional isomorphism is useful for understanding the politics and ceremony that pervade much of our modern organizational life.

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EATING WELL, EATING FARE: FARM ANIMAL WELFARE IN FRANCE

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Introduction

The post-structuralist literary critic Eugenio Donato saw two competing rhetorics in French food; the rhetoric of the ‘soil’ and the rhetoric of the ‘spice’ (Gopnik, 2000, p. 155). The former is bound up in the traditional and individual characteristics of place and product, enshrined in the concept of ‘*terroir*’ and linked to distinctive regional French cultures of food production. The latter, more open, embraces otherness and the exotic, France’s *ouverture* to different gastronomic and food influences. Reviewing the last few years, Gopnik (2000) concludes that “the “soil boys won easily” (p.158) going on to announce that “the *terroir* movement has a green, organic, earth conscious element that is very good news” (p. 158). Gopnik and Donato are primarily concerned with *cuisine*. Yet, within France, the dualism between a discourse of spatially and culturally (and indeed ecologically) embedded food ‘quality’ on the one hand and the global flows of an international and liberalised agro-food sector on the other, extends far beyond the *Menus du jour* of the better Parisian restaurants. Perennially associated with gastronomy and locally grown good food and wine, France is also a leading player in international bulk food trading, benefiting from a highly favourable subsidy regime under the Common Agricultural Policy to produce and export a range of animal and plant-based commodities. These two food sectors arguably co-exist in France as in no other State creating both a unique juxtaposition of socio-cultural constructions of food, its place and its qualities, and a characteristic political landscape of food chain actors that include some of the largest agro-food and retailing corporations in the world and yet also some of the most passionate defenders of food localism.

Gopnik (2000) links the rhetoric of the ‘soil’ with the agenda of sustainability. While, like others (Morris and Buller 2003; Winter 2003; Hinrichs 2003), we might contest automatic assumptions of inherent sustainability in local food production, our interest in this paper is to investigate how the related agenda of farm animal welfare maps onto this complex topography of French food production and consumption. For many, the gastronomic traditions of France would appear to suggest that farm animal welfare is not a major consideration for producers and consumers alike. Singer and Mason, in a recent work (2006) refer to the ‘Paris exception’, where dietary (and ethical) commitments are necessarily suspended when visiting the supposed food capital of the World. In France, *Foie gras*, *cheval* and veal, the *bêtes noires* of the international welfare lobby are, if no longer common, nonetheless still the accepted products of animal husbandry. Within French veterinary services, the term ‘*bien-traitance*’ (‘well treated’) appears to be gradually replacing the term ‘*bien-etre*’ (literally ‘well being’, the most common translation of the English term ‘welfare’) for farm animals (Lafon, 2005), a lexical shift that French animal welfare organisations, such as the *Protection Mondiale des Animaux de Ferme*, regard as significant

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backward step away from more animal-centred focus towards mechanisms of treatment. Moreover, French government resistance to a toughening up of recent European Union (EU) animal welfare legislation and the general base-level conformity to existing standards reinforce this sense that farm animal welfare is less important in France when held in comparison with other EU Member States, notably the UK and the Scandinavian countries.

Yet recent surveys of consumer and citizen engagement with issues of animal welfare suggest the contrary. Eurobarometer's 2005 poll shows the French in general expressing a high level of concern for farm animal welfare. Some 64% of the French respondents to the study believed that farm animal welfare did not receive enough importance in national agricultural policies, a higher proportion than was found in either the UK or the Scandinavian states (Eurobarometer 2005). Research under the EU financed 'Welfare Quality' programme makes a similar point, French people registering high levels of expressed concern for this issue (Kjaernes et al. 2007). Such an apparent paradox, even inconsistency, between, on the one hand, levels of expressed concern amongst the French survey respondents cited above and, on the other, broader categorisations of French society's consideration of animal welfare invites comment and analysis.

Our contention in this paper is that farm animal welfare is, indeed, a major and growing concern amongst French food chain actors and consumers but that such concern is often expressed in a distinctive and characteristic way in France. This, we argue, derives from particular socio-cultural constructions both of food and of farming. Drawing in part upon a wide-ranging research project into animal welfare in Europe (see below), we argue that farm animal welfare in France is closely seen as a component of product quality within the food chain rather than a distinct and independent ethical engagement on the part of consumers. As such it implies a closer degree of connectivity between consumers of animal products and the processes of food production leading to what some suggest is a potentially more 'legitimate' (Vialles, 1999) form of carnivorousness. In the following section of this paper, we explore the background to this contention drawing upon the work of Elias, Bourdieu and others to argue that a distinctive set of attitudes toward animal products in France has been significant in impacting upon the ways in which discourses of animal welfare are mobilised. We follow this by reporting on the results of an empirical investigation into the description and labelling of welfare conditions on food products and consider the role of animal welfare in the construction of food product 'quality'.

The animal consumed

At a recent annual dinner of meat producers in France, guests – including ourselves – were invited to identify the nature of the meat served for each of the courses. The answer sheet, placed at each guest's plate, revealed a range of possibilities; brain, liver, pancreas, stomach lining, kidneys and tongue as well as an impressive list of more conventional cuts, *bavette*, *onglet*, *filet*, *entrecote*, *gite* and so on. Bourdieu (1979) and before him, Elias (1939) have famously linked forms of social distinction – largely based upon, and driven by, the 'social capital' of income, wealth and power - to the consumption of different animal products; offal being traditionally a meat of the poor and thereby an object of necessity, the better cuts, favoured by the bourgeoisie, the objects of choice (Bourdieu 1979). The role of different patterns of social differentiation and structure upon food and food consumption has been explored by Goody (1982) for whom the persistence of a strong social hierarchy in France

prompted the emergence of distinctive food cultures (and notably '*haute cuisine*'), while the more homogenous or, as he names it, 'hieratic' social structure of England led to the development of a rather indistinguishable and undifferentiated food culture (see also Murcott, 2003).

However, food cultures are not static. For Mennell (1985), changes in both appetite and the manner of eating, incorporating the gradual rejection of offal by modern society, can be interpreted as part of Elias' (1939) broader 'civilising process' (Regnier et al. 2006). While Elias himself (1939) saw the gradual abandonment of the medieval practice of cutting up entire animals (often with their heads intact) and birds (often still in their feathers) at the dinner table as reflecting a combined social and psychological process of distancing from the material reality of animal life and death (see also Buller and Morris 2003). He writes:

The curve running from the carving of a large part of the animal or even the whole animal at table, through the advance in the threshold of repugnance at the sight of dead animals, to the removal of carving to specialised enclaves behind the scenes is a typical civilisation-curve (1939, p. 103).

Offal, it is often claimed, reminds us too readily of the animal from which it came, particularly its life and death (Mennell, 1985). Yet, as Vialles (1998) acknowledges - and as our annual dinner bears witness - offal still has its *amateurs*, particularly in France, for whom taste and quality define such foods as civilised delicacies. Vialles (1988) sees the issue of offal as lying at the centre of continuing debate around societal attitudes to meat eating (and, for us, provides a key to considering differential approaches to the issue of farm animal welfare). It offers a good demonstration of the "interaction of 'moral' and social grounds for food avoidance" (Mennell, 1985 p. 310). Many people eat meat but not all meat eaters will consume offal.

Central to our analysis in this paper is the distinction, drawn up by Vialles (1988) between two categories of meat eater; the '*sarcophages*' and the '*zoophages*'. The former are defined as those that seek to 'forget' or occult the obvious relationship between meat and animal. For such consumers, often constituting the majority in Western, urbanised society, only certain parts of the animal - those that are most anonymous - are edible and even these are required to be effectively 'de-animalised' (Fischler, 2001), not only through processing and butchering (Blondeau, 2002) but also through their nomenclature (Méchin, 1992). They become, as Vialles puts it, 'substances' which are "defined by their culinary destination" (1988) and not by their animalian origin, a definition explicitly adopted by British - and other - food retailers.

We are no longer in the business of selling pieces of carcass meat. We must make our customers think forward to what they eat rather than backwards to the animal in the field (British Meat, 1987, quoted in Fiddes, 1991, p. 96).

The second category, the '*zoophages*' are fundamentally different. These are the unrepentant carnivores, who, for Vialles (1988) recognise and, to a certain degree, embrace the animality of their food. For them, farm animals are there to be eaten and images of living animals in no way detract from this for their 'destiny' is unequivocal and unambiguous (Blondeau 2002). For many '*zoophages*', the consumption of offal thereby represents the high point in the animality/food linkage. Certainly, such a

'zoophagic' approach was evident at the meal referred to above and, to a degree, France as a whole might be characterised by the relative importance of the *zoophage* position. Comparing the meat eating habits of Germany and France, Wiesner-Bourgeois (2004, unpaginated, our translation) maintains of the former: "One disguises the meat in the form of sausages, meat balls ... that is the attitude of the 'sarcophage'", while "In France, however, we are still zoophages, though not as much as our ancestors".

In a market research survey of French meat consumers, Cazes-Valette (2004) seeks to identify the comparative importance of Vialles' two categories. Using, as her variable, consumers' recognition of the animal in the meat they eat, she announces that "*zoophages* are ... predominant in the French population" (p. 31). She notes equally that at certain moments, notably feast-days, that relative '*zoophagie*' might increase with the acquisition and preparation of specialist meat products. Similarly, she marks a creeping '*sarcophagie*' as the list of the edible moves away from the classic farm animals to those such as rabbits and horses that occupy a more complex positionality in human-nonhuman relations. Significantly, Cazes-Valette (2004) concludes that French consumers in general are characterised by their love of meat and by the importance they place in meat quality. Other studies too draw the link between the importance in France of red meat and the '*zoophage*' position (for example, Glandières 2003). Although we are wary of adopting too essentialist and uncritical a position in the light of these findings, both the importance of this *zoophagie* and its translation through concern for quality of the eating experience are critical to an understanding of how the issue of animal welfare becomes articulated within French food chains.

Our objective in the following section of this paper is therefore to identify how concern for farm animal welfare is expressed by French food chain actors and to explore how a *zoophagic* emphasis within France gives that concern a distinctive character. We draw in this section from a major research project into farm animal welfare entitled 'Welfare Quality'¹ whose broad aims are to bring together societal concerns and market demands, to develop reliable on-farm monitoring systems, product information systems, and practical species-specific strategies in order to improve farm animal welfare. As one part of that research, we have specifically investigated how discourses of animal welfare move through the food production chains in France, involving producers and manufacturers, retailers and consumers (Buller and Cesar, 2008). We argue here, that such discourses are, in France, strongly influenced by the *zoophage* tradition.

Method and Approach

There are a growing number of surveys of consumer attitudes to farm animal welfare (for example Eurobarometer 2005), many of which reveal an almost classic separation between expressed concern and actual purchasing behaviour. However, little research has focused upon how discourses and claims of higher welfare are employed by producers, manufacturers and retailers as a form of advantageous market segmentation and therefore, sales or price advantage, in response to perceptions of actual or anticipated consumer demand. Yet an increasing number of retailers, manufacturers and producer groups are making such claims either through specific advertising, label information, certification, quality assurance or other forms of discourse (such as

¹ Welfare Quality© is an EU funded research project (FOOD-CT-2004-506508) about the integration of animal welfare in the food chain: from public concern to improved welfare and transparent quality.

images or statements of corporate social responsibility). Across Europe, references to, or claims of, beneficial and improved conditions of husbandry (outdoor or grass-fed, organic feed, longer life, hormone or growth accelerator free and so on) or such anthropomorphic characteristics as ‘happiness’ and ‘freedom’, that often go over and above minimum legal requirements, are appearing on a growing number of animal products suggesting that higher welfare conditions can be a viable selling point.

In order to identify these discourses and claims, to investigate the manner in which they were framed and to explain them in the context of distinctive national traditions and concerns, we undertook a survey of animal-based products available in a representative sample of major retail outlets within six European countries (France, the UK, Italy, Norway, Sweden and the Netherlands) through 2004 and 2005. We focused specifically on products that made some reference of claim about animal welfare either on the packaging or as part of any certification or assurance procedure.

The research in France was undertaken in 31 supermarkets from a variety of locations in the Paris region. The research encompassed several stores for each of the major retailers (*Auchan, Carrefour, Intermarché, Leclerc*), more specialist chains (*Monoprix, Système U*), discount food stores and three organic supermarket chains. In each store, an inventory was made of all the fresh animal based products on sale which made reference in their labeling, packaging or display, to the animal welfare conditions relevant to their production. Canned goods and pre-prepared dishes were not sampled. Rough estimates were made of the relative proportion of shelf space occupied by these products but this was not undertaken in a systematic manner and has not been included here.

This initial survey and subsequent analysis of claims and references was followed by a series of interviews with those food chain actors (from retailers back to producers) involved in these particular product lines. The aim here was to examine, in detail, first, how improved animal welfare practices were introduced into production chains and why and, second, to explore the construction and choice of the welfare claims and references made in response to assumptions about consumer practice. In total, some 65 semi-structured interviews were carried out (30 with retailer actors, 33 with producers and manufacturers).

Differentiating animal welfare friendly foods

Given perceptions of the relatively low importance of farm animal welfare in French food production chains alluded to above, there are a surprisingly high number of food products available in French retail outlets that openly refer to the welfare of the farm animals concerned. Indeed, the absolute number of such products identified during the course of the research exceeds that of those other participating States more readily associated with a heightened public concern for animal welfare (Table 1). Furthermore, such information is found relatively evenly across the three different label types; those established by the food producers and producer groups, and thus embedded in husbandry practice, those affixed by the retailers as a method of store branding at point of sale, and those applied by the manufacturers, the traditional source of product information.

Table 1. Absolute numbers of food products on display in surveyed retail outlets identifying the welfare conditions of farm animals concerned, by country and by label type, 2004.

Country	Producer label	Retailer label	Manufacturer label	Total
France	43 (22%)	62 (31%)	93 (47%)	198 (100%)
United Kingdom	12 (10%)	53 (44%)	56 (46%)	121 (100%)
Norway	47 (41%)	2 (2%)	64 (57%)	113 (100%)
Sweden	42 (62%)	9 (12%)	17 (26%)	68 (100%)
Italy	4 (5%)	31 (40%)	42 (55%)	77 (100%)
Netherlands	25 (10%)	51 (22%)	161 (68%)	237 (100%)

Source: Welfare Quality© SP1.2 research, national teams in the six countries, 2004.

Looking at the distribution of animal-based product types carrying welfare claims, it is clear that France again displays a highly distinctive profile (Table 2.) in the relatively high weight given to welfare labelling in beef and, in contrast, the relatively low importance given to eggs against, for example, the UK. Nevertheless, in real numbers, there are significantly more pork, egg and dairy products carrying welfare claims in France than in the UK. Again, we are confronted with this apparent paradox between, on the one hand, evidence of a relatively high level of welfare labelling and, on the other hand, a commonly-held belief that welfare is a relatively low priority for French consumers.

Table 2. Relative proportion of each type of animal-based products carrying a welfare claim identified in retail outlets, by country, 2004.

Country	Pork	Eggs	Dairy	Beef	Chicken
France	17%	14%	22%	33%	14%
United Kingdom	25%	26%	24%	9%	16%
Norway	7%	20%	56%	8%	9%
Sweden	32%	27%	17%	14%	10%
Italy	1%	26%	38%	6%	29%
Netherlands	18%	31%	36%	13%	2%

Source: Welfare Quality© SP1.2 research, national teams in the five countries, 2004.

These results, to some extent, reflect the overall structure of the French agro-food sector and the place held, first, by characteristic quality labelling schemes such as *Appellation d'Origine Controllee* and *Label Rouge* and, second and more recently, by the growth of the organic sector. Such schemes, most of which are initiated by producers and producer groups on the basis of traditional, distinctive and locally specific farming practices, increasingly make welfare claims (though this is, as yet, far from being universal) as being intrinsic to traditional production methods and

husbandry practices and are frequently associated, in the minds of consumers, with perceptions of better animal lives (Poulain et al. 2007). They account for a significant proportion of notably beef/veal and poultry sales in France; approximately 1% of all pig production, 6% of egg production, 20% of veal production, 18% of dairy/cheese production, 60% of beef producers and around 35% of poultry producers (Vasseur et al., 2005).

Our point here, one that we develop in the following section, is that many of these seeming welfare claims are closely associated with certified and assured product ‘quality’ systems, rather than with specific actions to improve the quality of farm animal lives. What is therefore characteristic of French animal welfare discourses is that these are largely generated by producers and producer groups to reflect processes and practices of production designed to yield an animal product whose quality is primarily assessed in terms of the eating experience. Although animal welfare has not been part of the traditional discourse of husbandry in France, it has become so partly because producers and producer groups are able to gain additional legitimacy as food actors and additional value for their production systems and husbandry styles – particularly those that are clearly distinguished from intensive indoor systems – by drawing attention to the welfare benefits of their farming practices as a component of product quality. These discourses are then adopted by retailers for eventual sale, making explicit the link between food product and animal husbandry. This, we would argue, is substantively different from those countries where welfare conditions are, to a large degree, imposed by retailers upon their supply chains as a warranty of corporate ethical responsibility.

Animal welfare as food quality

Many of animal welfare claims relating to meat and dairy products in France are framed in terms of product ‘quality’. Here, quality is a complex and relational composite. Interviews² with food chain actors in France, implicated in such production chains reveal the primacy of the eventual consumption rather than the welfare of the animals per se.

“Above all, it is the quality of the product, taste quality, reference to the locality and the traceability of the product – knowing the name of the farmer and what the animals have been fed on. In the two meetings we had with consumers, no one asked about welfare” (Interview: Breeders’ group representative, *Label Rouge* pork, 2005).

“The key word for me is quality. You can’t get by without this. It’s a chain and each link is important. So if you want a decent product then you must have a well-treated animal, so welfare is part of the quality. If the slaughter is badly done, then this has repercussions above and below that particular link in the chain. The animal has to be well treated in the abattoir. It concerns all the links in the chain, this key notion of quality” (Interview: Supermarket meat buyer, 2005).

² All interviews were undertaken in French. All quotations here have been translated by the authors.

Here, Welfare claims are ‘bundled’ with other concerns to convey a sense of quality that extends beyond the product itself to encompass the processes and the place of production as the following examples, taken from product labels and brand websites, demonstrate:

“The quality of life of our cows: whether in the stable or outside in pasture, they live in the calm, in a spectacular and spacious environment (...) Good conditions at milking, in a clean and welcoming milking parlour, our farmers avoid stress to respect animals' well-being” (Milk Cooperative statement, undated).

“For the evaluation of good husbandry practice, the controls, undertaken by our veterinary advisory service concern the respect of several criteria including welfare and hygiene of animals, respect for the environment” (Interview: Meat manufacturer, 2005).

“When happy, a cow gives a better milk which is why our camembert comes only from farms which voluntarily adhere to our quality assurance scheme , ‘*La route du Lait*’ which guarantees the welfare of the animals” (Dairy cooperative statement, undated).

“They feed naturally amongst the Norman apple orchards and grasslands and receive daily and attentive care” (Dairy Cooperative statement, undated).

“Raised in the open air, the hens find grass and insects on the extensive grasslands that the farmers make available to them (Poultry farming cooperative statement, undated).

These product label and website statements, all of which are generated by producers and producer groups (rather than by retailers) reveal clearly how animal welfare is coming to be portrayed as being embedded in a wider range of constructed ‘goods’; the landscape and the rural environment, nature and naturalness, the work of the farmer and, finally, health – both that of the animal and, by extension, that of the consumer. Buying products so labeled, is to buy into a beneficial rurality, implicitly allied to better tasting food. This latter association is fundamental. Many of the retailer buyers interviewed in the course of this research acknowledged that the taste of the product remains the single most important criteria for their consumers (after price) and that higher welfare standards on their own made little, if any, difference to the gustative qualities of the product and could not, therefore, be a basis for higher prices. Moreover, for some, the value placed upon taste (as distinct from more specific animal welfare claims) is a distinctive feature of French consumption.

“In the beginning we want to promote a good poultry product and for that, the taste is the strongest argument for us to sell and for the consumer to buy. But, where the welfare aspects are put first as in other countries, then taste is noticeably less important” (Interview: Manufacturer of poultry products, 2005)

As a result of this association with taste, farm animal welfare claims are predominantly couched in terms of ‘longer’ animal life, grass feed, free movement and a sense of animal ‘contentedness’ in nature; all of which become interpreted as

components in the improved final taste of the meat. Significantly, it is in those sectors (milk, eggs and pork) where the standardization of animal breeds had virtually obliterated any intrinsic product distinctiveness by taste that welfare – as a component of ‘quality’ – has become most developed as a criterion of product segmentation.

The general imagery to which claims contribute stands well outside purely scientific understandings of animal welfare. Again from the labels, websites and information sheets investigated, a range of evocations emerge, including: ‘honesty’, ‘purity’, ‘naturalness’, ‘cleanliness’, ‘tradition’, ‘peace’, ‘respect’, ‘freedom’, ‘liberty’, ‘mountains’, ‘wild’, ‘family’ and ‘countryside’. Collectively, these reinforce the notion of farm animal welfare as an implicit component of quality rather than an explicit ethical commitment. Indeed, acknowledging the possibility of the latter is somewhere that some food chain actors simply do not wish to go as the following quotation reveals.

“We try not to let consumers think about the issue of the live animal and they don’t want to think about a live animal when they buy veal. We know that we mustn’t show the head of a live animal ... For our marketing strategies, we play on the pleasure of eating, variety of foodstuffs, nutritional balance and so on – far more than any relation to the actual animal. We just don’t dare go there because we know that can draw criticism for the fact that we sacrifice the animal, or that there are constraints, not necessarily very attractive ones, that are placed on the animal on the farm for reasons of economic production” (Interview: Veal manufacturer, abattoir, 2005).

Where ethics do begin to play a more overt role, however, is in the gradual enrollment of animal welfare into a wider set of environmental sustainability discourses particularly amongst those major retailers and manufacturers conscious of the criticisms of non governmental organizations and others regarding their general environmental impacts.

“The various articles and programs on the conditions of animal husbandry and of slaughter have increased people’s sensitivity to these issues and to sustainable development. I have assimilated all of these into conditions that respect the environment, mankind and the animal. That is my position, that animal welfare is part of sustainable development. This is certainly how we have approached it. What we are trying to do is be coherent with respect to sustainable development in terms of respect for man, the animal, the environment - that’s it. It is an engagement of the company more than a message to our clients” (Interview: Quality Manager, Supermarket Chain, 2005).

“Consumers are beginning to pay attention to issues of environment, fair trade... I put animal welfare in with all that: the welfare of the planet, of the environment, of animals, of biodiversity and so on. What we must do is ban the bad practices but that is going to take a lot of doing” (Interview: Abattoir manager and food manufacturer, 2005).

While this relationship of animal welfare to environmental sustainability is far from being clear (Buller and Morris, 2007), the gradual assimilation of the former into the latter is a marked trend in retailer and manufacturer commercialization strategies though it is arguably more an element of identifiable corporate social responsibility than a means of facilitating individual consumer choice and hence direct ethical engagement. Critically, the idea here is to create a broader ethical framing within which individual consumers are, to some extent, absolved of the need to make ethical choices themselves.

Conclusions

This paper has argued that the construction of discourses and claims about farm animal welfare in France is closely linked to notions and representations of food quality, particularly in terms of gustative experience. This we maintain reflects the importance of the *zoophage* tradition in French meat consumption, where the eating of animals is acknowledged and, to a certain degree, celebrated with less of that degree of distanciation that 'protects' the contemporary consumer from the harsher realities of meat production. Producers engaged in the production of quality animal based products, often through some specific labeling and certification mechanism, have been keen to draw upon welfare discourses to enhance the overall attractiveness and distinctiveness of their products to consumers. As such, claims about animal welfare rarely stand independently as distinct factors of market segmentation and indeed few food chain actors would want to see this develop.

In this way, animal lives are still very much part of an overt quality discourse suggesting a generally uncritical and uncontested acceptance of their essential 'meatiness'. This is a view we ally with the *zoophage* position. Where claims are made, animals, and their welfare, are generally embedded in spatially distinctive, often outdoor-based production systems, whether they be under *Label Rouge* or *Appellation d'Origine Contrôlée* quality schemes, organic, or merely other, uncertified, forms. The welfare of the animals is seen as integral to the quality of the final product. Thus knowledge of those welfare prescriptions become part of knowing the product itself. The animal's life, in its lived sense, as well as its material sense, is thereby indistinguishable from the product. The consumer (advertently) consumes that life and the better the life, the better the consumption. As Singer and Mason (2006) point out, this is emerging as a strong line of defense for proponents of a more enlightened meat-eating, such as Fearnley-Whittingstall (2004) for whom knowledge (and acknowledgement) of animal lives (and, ultimately, deaths) stands as a form of legitimation.

By way of contrast, industrial animal production methods, such as intensive indoor feeding units, so successfully obfuscate animal lives and animal deaths both through their standardized technology and the anonymity of their labeling that they achieve an almost total negation of animality (Viailles, 2007). For many observers, it is this very negation that provides the backdrop for what are often extremely low, and even unacceptable, levels of animal welfare. It is upon this negation that the *sarcophage* position rests.

The question remains, whether the *zoophage* position or whether the *sarcophage* position is likely to have a greater impact upon driving the animal welfare debate forward. Both to some extent, as Vialles (1988), points out, represent a negation of the animal.

It is the attitude of the *sarcophage*, for whom identification *with* the animal leads to a refusal to recognise the animal within the flesh consumed ... It is the attitude of the *zoophage*, for whom identification *of* the animal in the flesh is possible because, in the eyes of the *zoophage*, the animal is already purely a source of food' (Vialles, 1988, emphasis in the original, our translation)

Both therein perform a process of de-animalisation, the *sarcophage* by a strategy of deliberate unknowing, the *zoophage* by objectification. Concern for farm animal welfare, however, necessarily re-animalises food and, through its engagement with animal lives, directly challenges the functional objectification of farm animals and demands engagement with the process by which they are transformed into food on our table.

Returning to the discourses that opened this paper, the *zoophage* tradition, and the discourses of animal welfare associated with it, find common ground with the 'soil' rhetoric. French concern for territorially embedded food quality, characteristic of that nation's gastronomy, has been, as we have shown in this paper, an important element in raising the profile (and value) of farm animal welfare in those production systems where both are intrinsically linked, such as extensive grass-based meat and dairy production. This has largely driven the proliferation of welfare claims and statements made on animal-based products. Yet in other, more intensive production systems, it has been *sarcophage* concerns that have driven the welfare agenda. It is noticeable, for example, that the veal sector in France has made significant and substantial changes to both its procedures and its commercialization strategies in response to animal welfare concerns. These include a collective decision to move away from showing pictures of live animals in publicity material for veal and their replacement by pictures of prepared veal dishes.

This paper has also explored the linkages between, on the one hand, discourses of quality and animal welfare and, on the other, notions of rurality, territorial specificity and environmental sustainability³. Sociologists and historians of food are fond of erecting an urban/rural distinction in tracing the development of food cultures. The common argument is that a more refined urban taste aesthetic gradually replaced peasant traditions (Bloch, 1954). Although, as Mennell (1985) points out, the interchange of regional cuisine and more elite gastronomy has been, certainly over the last 100 or so years in France, a more subtle interchange, it is notable that, in the product chains associated with high welfare claims, rural sustainability and local food cultures, we see what might be identified as a revitalized agrarian tradition. This is found not only in the nature of the food and in the food production processes, but also in a valorization of the role of the farmer as the guardian of his/her animals' welfare.

³ We acknowledge, of course that, in this paper, we have taken claims of improved welfare conditions at face value. There can be considerable distance between a 'claim' and a verified and certified action or actions.

We have deliberately left consumers out of the picture here. Our analysis has focused rather upon the constructed messages and discourses of welfare as they are associated with the products and processes of animal farming. It has become almost banal to state that consumers express a concern for animal welfare and that yet it is only for only a very small proportion that this concern actually impacts upon their purchasing behavior⁴. We have explored in this paper how animal welfare claims in fact find their way onto a wide range of products, albeit as part of a broader agenda of consumer demand. Their association with quality is, as Singer and Mason (2006) accept, an improvement over ‘factory farming’. It is also a process of re-animalisation, of cognition, and, as a result, the basis for a fuller recognition of the fact that the acquisition and eating of food should be an ethical engagement. Of France, Gopnik (2000, p. 165) observes: “Even their philosophers eat for pleasure”.

⁴ The principal exceptions to this being the purchase of Free Range eggs which, in Europe, has grown significantly in recent years, or the deliberate non-purchase of certain ‘notorious’ animal products such as *Foie Gras*.

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CONSUMPTION OF WELFARE-FRIENDLY FOOD PRODUCTS IN GREAT BRITAIN, ITALY AND SWEDEN, AND HOW IT MAY BE INFLUENCED BY CONSUMER ATTITUDES TO, AND BEHAVIOUR TOWARDS, ANIMAL WELFARE ATTRIBUTES

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Introduction

There is increasing concern amongst consumers regarding the quality and safety of the food that they buy. Some of this is the result of food scares such as bovine spongiform encephalopathy/variant Creutzfeldt-Jakob disease (BSE), foot and mouth disease, salmonella and, more recently, avian influenza. These phenomena, together with ethical concerns, cause consumers to reflect upon the welfare of the farm animals from which the food they consume is produced.

The issue of animal welfare is increasingly being seen as important throughout the developed world, not least within the European Union (EU). Concern about the welfare of farm animals within the EU, shown by various surveys (e.g. European Commission 2007; Kjaernes et al. 2007), has been reflected by the increasing amount of farm animal welfare legislation and policy initiatives (see, for example, CEC, 2006).

The ethical debate concerning the interrelationships between man and animals, the use of animals, and the obligations that man may have towards them, has been ongoing since at least the writings of philosophers such as Aristotle, through those such as Jeremy Bentham (1789) to those more recently in the 20th and 21st centuries such as Peter Carruthers (1992), Tom Regan (1985), Bernard Rollin (1992), Peter Singer (1975) and others. Degrazia (1999) provides a useful review of the recent debate, whilst Bennett et al. (2002) provides a very brief history within an introductory page. The debate has focused on the moral standing of animals, whether and to what extent they might have (or be accorded) rights, and whether their suffering should be taken into account within a societal value framework. A pluralistic approach, incorporating a wide range of considerations from different perspectives has emerged, including reference to animal welfare science and questions concerning animal cognition and sentience (Fraser 2000).

The principles of utilitarianism are of particular relevance in this regard. Utilitarianism comes in many forms and not just 'the greatest good to the greatest number'. It forms a basis for ethical argument used by many writers, at least since Bentham (1789) and, indeed, underpins some social science disciplines, notably economics. The famous 'equal consideration of interests' (Singer 1989) is based on

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the utilitarian ethic strengthened by the scientific work on sentience by scientists such as Rollin (1995) and Dawkins (1980 & 1998) amongst others.

Here, the utilitarian principle is considered further in relation to consumer information on animal welfare. In understanding consumer behaviour, economists have put forward a simple model whereby consumers can be thought of as trying to maximise their utility from consumption. They choose to consume food and other products on the basis of the utility that they derive (or expect to derive) from that consumption, balanced against the 'disutility' of parting with their money in order to obtain those products through the market system (e.g. Lancaster 1966; Bennett 1997). Within this model, animal welfare can be seen as an unsought 'externality' of the production and consumption of animal products (meat, milk, eggs etc.) (Bennett 1995). The form that this externality takes depends on the perceptions of consumers. Many may experience a cognitive dissonance (Reber 1984) that their consumption of animal products is associated with animal suffering, which for them may be a source of disutility and may reduce the satisfaction (net utility) that they derive from consuming animal products. Thus, their welfare is reduced. For many, this provides sufficient disincentive to the consumption of animal products that they cease such consumption altogether and become vegetarian or vegan - 5-7% of adults in the UK, 3-4% of adults in Sweden and some 8% in Italy (Vegetarian Society 2006; Szatek 2003; Miele et al. 2004).

The utilitarian argument brings into question the merits of providing greater information to consumers about animal production methods, a policy suggested by many policy makers within the EU as a means of generating 'demand pull' to improve the welfare of animals. Consumers may be blissfully unaware of the suffering of animals associated with the products they consume and derive high levels of utility from their consumption. Information on production methods may reduce consumers' utility (for the reasons discussed above) and thus their overall welfare. From a human utilitarian position this is not desirable, at least in the short run. In the longer term, the argument is that with appropriate information on animal welfare, consumers can then demand the products with the animal welfare attributes that they want and so better satisfy their preferences and improve their welfare. In addition, if animal utility also becomes part of the equation (either in its own right or as a function of human utility), this further strengthens the argument for improved consumer information on animal welfare and improved consumer choice (see Bennett 1995 for a more detailed theoretical exposition).

However, this argument assumes that (i) appropriate information on animal welfare is provided to consumers and (ii) the market mechanism works satisfactorily to service consumer preferences for animal welfare. Transaction costs theory (Coase, 1984) suggests that if the costs of sourcing animal welfare friendly food products are high (i.e. the time and travel costs involved in searching for and finding such products in food stores), then consumers will be less likely to buy them, since these costs are in addition to the cost of the products themselves.

This paper uses data collected in a Computer Assisted Telephone Interview survey of approximately 1500 consumers to further explore the above questions in each of seven European countries as part of the EU-funded Welfare Quality research project to ascertain consumer attitudes to, and behaviour regarding, the animal welfare attributes of food in three of these countries: Italy, Great Britain (GB) and Sweden (Kjaernes et al. 2007). The survey interviews, which lasted some 20 minutes, were

carried out by TNS Global between 12-27 September 2005 using Random Digit Dialling. The interviewees were selected at random from people aged 18-80 using the 'first birthday rule' for the household. For each country, the data obtained were weighted by region, sex, age, household and population size according to official national census statistics. The questionnaire, which contained no open-ended questions, was drawn up following a series of focus groups and then trialled in a pilot survey. Telephone interviews were chosen for cost and time reasons over face-to-face interviews. However, the disadvantage of telephone interviews is that they have to be fairly short and that there is little chance of spontaneity in answering (Kjaernes et al. 2007). As the response rate varied only marginally from country to country, and question to question, and the variation was too small to affect the overall results, the responses to each question are expressed in this paper on a percentage basis for comparative purposes.

To test for the statistical significance of differences between the results for the different countries, log linear models were created using the statistical package SAS, and Chi-squared tests performed, the significance of which are shown alongside the results tables, where appropriate, later in the paper. These not only tested the difference between the different countries for each question but, also, for the questions where the answers were on a sliding scale, a proportional odds version of the model was used to examine if there was any difference between the countries along the whole trend of the scale. As is usual in scientific practice, *** are listed where the difference is likely not to be by chance is less than 0.1%, ** where this difference is likely to be between 0.1% and 1%, and * where this difference is likely to be between 1% and 5%.

Current Consumption of Livestock Products

In order to compare and discuss the results of the survey, it is useful to examine the actual differences in consumption of livestock products across the three study countries at around the time of the survey. Table 1 illustrates these levels and changes in consumption of livestock products per capita. The first thing of note is the high overall consumption of meat in Italy with an average consumption per person per year of over 73 kg. Average consumption is next highest in the UK with 65.4 kg, followed by Sweden with 39.2 kg. However, the average consumption in Sweden has been rising considerably, thought to be due to an increase in cheaper imported meats (Pettersson and Bergman 2004). The three countries also show very different trends. In the UK, it is the consumption of poultry that is very high and this has increased substantially over the last 8 years. In Sweden, beef consumption has doubled, as a result of cheap beef imports. Consumption of meat in Italy has remained much more constant, although a slight increase in pork, and a reduction in beef is shown. Egg consumption in Italy is higher than the other two countries but, in all countries, it has been fairly static. Milk consumption has decreased in all three countries, although average per capita consumption is much higher in Sweden and the UK than in Italy.

The figures in Table 1 reflect the results from our survey, which show that the British eat poultry the most frequently (82% more than weekly) followed by the Italians (76%) and then the Swedes (51%). On the other hand, the Italians and Swedes eat pork more frequently than the British and many more Italians eat beef at least once a week compared to the other consumers.

Table 1. Meat and livestock product consumption per capita in Sweden, Italy and GB, 1994-2002

	Beef kg/cap	Pork kg/cap	Poultry kg/cap	Milk l/cap	Eggs kg/cap
Sweden					
1994	6.8	12.0	7.7	146.0	10.8
1996	8.2	13.3	8.1	144.3	10.9
1998	9.0	15.7	8.9	142.0	11.0
2000	10.8	15.5	11.8	138.7	10.4
2002	11.0	14.4	13.8	141.5	9.1
Italy					
1994	25.9	27.3	18.8	74.4	na
1996	23.6	28.1	19.3	76.8	13.9
1998	24.4	28.5	19.3	na	14.0
2000	24.5	30.1	18.5	64.5	13.8
2002	24.0	na	19.1	na	14.0
UK					
1994	16.7	19.9	25.2	124.7	10.9
1996	12.7	19.5	27.2	123.0	10.8
1998	15.0	20.1	28.2	120.3	10.6
2000	16.0	19.8	29.0	118.7	10.6
2002	16.7	20.0	28.7	na	12.5

Source: Bennett and Yee (2004); The Dairy Council (2002); Miele et al. (2004); Pettersson and Bergman (2004).

In all study countries, figures on how much welfare-friendly produce is purchased are difficult to source, as few products are labeled specifically with animal welfare standards. In GB, there is really only one specific animal welfare label, which is the RSPCA Freedom Foods but it does not appear to be widely recognized or available, and accounts for a very small proportion of animal product sales. The Freedom Foods Scheme supplies around 2% of the livestock product market in the UK and free-range eggs account for 15% or so of egg consumption in the UK, whilst barn/perchery eggs constitute around a further 5% (Bennett and Yee 2004; Mayfield et al. 2005). In Sweden, the main 'ecological' labels, Krav and Swedish Seal, have animal welfare components but are mainly about the environment and healthiness of the food. Similarly, in Italy, there has been an increase in the range of food with animal welfare labels but the labels do not refer specifically to animal welfare but type of production system (i.e. outdoor or extensive methods of production) (Miele et al. 2004). However, in all three countries, there has been an increase in the consumption of organic livestock products, for which animal welfare concerns may have a part to play. In Sweden, this is particularly so in the sales of organic beef, organic pork and organic eggs. In GB, it is organic eggs, organic poultry and organic dairy products and, in Italy, organic eggs, organic dairy and organic beef products. In GB, although the size of the market for organic food products is quite small, at some 1.3% of all food products sold (Soil Association 2006) there has, nevertheless, been significant growth in the aggregate value of the organic market in recent years. Within the EU, the largest current market for organic food is Germany followed by Italy and the UK (Soil Association 2006). However, these are all increases from very low levels and still only account for a few percent of the total meat and livestock produce consumed. Evidence from academic research indicates that animal welfare is only one of the reasons why people purchase organic food. For example, in Sweden, the reasons given for buying organic food rank animal welfare behind health and environmental concerns (Pettersson and Bergman 2004).

Results

In the rest of this paper, we examine the results from our survey which looked at the attitudes and behaviour of consumers towards animal welfare.

The importance of farm animal welfare to consumers

Table 2 shows that most consumers in each study country stated that animal welfare is very important to them. Taking those who responded with a 4 or 5 to this question together, we can see an overwhelming majority of consumers stated their belief of the importance of animal welfare.

Table 2. How important to you in general is farm animal welfare?

Rank	1 (Not at all)	2	3	4	5 (Very)	χ^2
	%	%	%	%	%	
Italy	2	2	9	10	77	88.05***
Great Britain	4	3	20	23	50	23.33***
Sweden	1	3	13	27	56	

The chi-squared tests results indicate the level of significant difference (i.e. to what probability level there is likely to be a difference between the trends in the three countries) where one country (in this case Sweden) is taken as the benchmark. They show that the difference between Sweden and the other two countries is very significant at the *** level. Given the previous results, it is then interesting to see (Table 3), that only about one half of those who think animal welfare very important, would actually always think about farm animal welfare when they are buying meat. This provides some support to the theory mentioned above that consumers who care about animal welfare suffer cognitive dissonance from livestock product consumption and so may prefer not to think about welfare when they are buying meat.

Table 3. How often do you think of farm animal welfare when buying meat?

Rank	1 (Never)	2	3	4	5 (Always)	χ^2
	%	%	%	%	%	
Italy	16	12	18	13	41	5.36*
Great Britain	20	13	28	16	23	42.12**
Sweden	10	11	27	28	25	

A series of questions regarding how much public benefit will be provided by improved animal welfare showed that consumers overwhelmingly believed that good animal welfare will improve the taste of meat, increase cows' milk yield, benefit the reputation of the consumers' country, improve human health and not cost more to apply than existing standards and so not put farmers out of business. Italian consumers were shown to be considerably more positive about the public benefits of good animal welfare than those in either Sweden or GB. This result provides important confirmation that animal welfare friendly products have a number of attributes (Lancaster 1966) in the minds of consumers with benefits beyond merely increasing the utility (in the utilitarian sense) of animals.

Attitudes of consumers to animals in general

The questionnaire enabled the exploration of the general attitude of consumers to animals through questions regarding issues such as whether animals feel pain, and whether it is acceptable to kill animals for food. The answers show significant national differences in such attitudes, particularly with regard to hunting.

In response to the question ‘Can animals feel pain?’, almost all the respondents agreed. Most respondents also agreed that it was acceptable to kill farm animals for food, the largest majority coming from Sweden. Those who disagreed with the proposition were 6% in Italy, 6% in GB and 3% in Sweden which correlates well with the number of vegetarians and vegans in these countries. However, regarding the acceptability of hunting game animals for food, in Italy, 54% of consumers believed that this was not acceptable, and only 14% believed that it was acceptable. In GB, the result was more evenly balanced with 28% believing that the proposition was unacceptable and 26% believing the opposite. However, in Sweden, most consumers were strongly in favour of the proposition that hunting of game animals for food is acceptable (63%) with only a few (4%) opposed. This may be because in Sweden the hunting of game animals is not only a sport but is essential for food acquisition purposes. This is not the case in GB or Italy, where hunting is almost entirely carried out for sport or public health reasons. Furthermore, Sweden has large wild game animals such as elk (*Alces alces*) of which up to 100,000 are hunted and killed each year (Government Offices of Sweden 2006). These are not present in GB or Italy.

There was general agreement amongst consumers in the study countries that it is wrong to eat food from animals that have not had a ‘good life’. (What constitutes a good life for animals was not explored in any detail, but there are clear links here to utilitarian ethics.) This view found particular favour with consumers in Italy (57%) but rather less so in GB (42%) and Sweden (37%). These results, while lower in all three countries than the number of respondents answering a similar question on how important, in general, animal welfare is to consumers (Table 2), nonetheless can be seen as lending support to the underlying hypothesis that good standards of farm animal welfare are important to consumers.

Consumers were then asked whether, when eating meat, they did not like to think of it coming from a live animal. Not surprisingly perhaps, as implied by comments made elsewhere, many Swedes appeared to be not at all concerned by this factor (71%). British consumers were rather ambivalent with 40% neither strongly agreeing nor disagreeing although a significant proportion (21%) said that they did agree and disliked thinking of the meat they were eating coming from a living animal. Italian consumers were rather more polarised in their views with sizeable groups appearing to have little problem with thinking of meat as deriving from a living animal (45%) but with a large minority (28%) who were concerned. Again, this question lends a level of support to the theory that (some) consumers experience cognitive dissonance from meat consumption due to their concerns about animal welfare.

Consumers’ attitudes to different farming methods.

Consumers were asked how they felt about different farming methods. The survey shows empirical evidence that consumers do distinguish between different farming

systems. One such example shows in the stated preference for free-range hen eggs. When consumers were asked about their preferred type of hen egg, most of those in GB (71%) and Sweden (65%) said that they usually chose free-range while 47% of Italian consumers stated that free-range was their first choice. These results could also be interpreted as evidence that consumer preference is for hens to spend at least part of the year outdoors or, at the least, to be able to roam free from constraint. However, it is interesting that the high proportion of those who state they usually buy free-range eggs is not reflected in the national statistics of any of these three countries of the proportion of free-range eggs actually purchased. In some cases, this may be more a reflection of what consumers feel they 'ought' to be buying although, prior to compulsory labelling of cage eggs within the EU, it was clear that many consumers thought they were buying free-range eggs when they were not and, since this labelling, the actual consumption of free-range eggs has increased substantially in the UK (by around 100% since 1998 (Defra 2007)).

The treatment of hens (Table 4) was regarded as very important by the majority of consumers in all countries, with the highest majority being in Italy (77%), followed by GB (64%) and Sweden (59%); these national differences were significant at the ** level.

Table 4. How important is the treatment of hens and beef cattle?

	Hens			χ^2	Beef cattle			χ^2
	Very %	Fairly %	Not %		Very %	Fairly %	Not %	
Italy	77	19	4	9.63**	79	17	4	12.51**
Great Britain	64	27	9	2.68	69	24	7	3.65
Sweden	59	34	7		71	26	3	

The treatment of the animal (see Table 4) with regards to beef cattle, was considered very important by 79% of the Italian respondents, 69% of the GB respondents and 71% of the Swedish respondents and these national differences were significant at the ** level. The slaughtering methods were also considered to be very important by the majority although these majorities were smaller than those considering general treatment i.e. Italians 62%, British 59% and Swedish 51%. The question as to whether it is important to raise the animals outdoors for part of the year was seen by more in Italy to be very important (78%), but less in GB (57%) and Sweden (47%).

We also asked consumers how good they considered welfare conditions to be in their own country for chickens, dairy cows and pigs (Table 5) and consumers in all three countries considered the welfare conditions of hens to be the poorest. Swedish consumers were the least negative which may be a reflection of the overall general belief and trust they have in the standards existing in their country across all farming systems. British consumers were the least positive about welfare conditions for hens. However, the results are reversed for pigs, where British consumers were more positive about pig welfare than consumers in the other countries. These results may reflect the negative influence on public opinion of animal protection campaigners (such as Compassion in World Farming) in the instance of both battery and broiler chickens and the positive influence of the sight increasingly seen of pigs raised outdoors. Italian consumers were the most negative about welfare conditions for

dairy cows and pigs. When these results were subjected to Chi-squared tests, only the opinions on the welfare of dairy cows showed any statistically significant differences between countries, with Italian and British consumers shown to be significantly more negative in their response at the ** level.

Table 5. How good do you think welfare conditions are for chickens, dairy cows and pigs?

	Chickens			Dairy cows			Pigs		
	2 (Poor) %	3 %	4 (Good) %	2 (Poor) %	3 %	4 (Good) %	2 (Poor) %	3 %	4 (Good) %
Italy	49	29	22	16	34	50	32	41	28
Great Britain	56	27	18	12	36	52	22	41	37
Sweden	40	40	20	5	23	72	15	45	41

Most consumers surveyed in Italy, GB and Sweden believed standards of animal welfare had improved in the previous 10 years, particularly Swedish consumers. As Table 6 shows, only a small percentage believed that standards had fallen during this period.

Table 6. Do you think that farm animal welfare has improved, is about the same or got worse over the last 10 years?

	Improved %	Same %	Worse %
Italy	59	26	15
Great Britain	55	31	14
Sweden	68	18	13

In terms of the quality of animal transport and the treatment of animals at slaughter, Swedish consumers were much more positive than those in GB and Italy. The Italians were the most negative, with 41% of responses saying they thought the methods of transportation very poor, and 33% of them thinking the treatment of animals at the slaughterhouses very poor. This compares to 21% (GB) and 6% (Sweden) for slaughtering conditions and 24% (GB) and 12% (Sweden) for transport methods. This latter result is statistically significant at the *** level (Table 7).

Table 7. What do you think of the methods of transportation used in your country?

	Poor %	2 %	3 %	4 %	Good %	χ^2
Italy	41	23	24	7	4	23.3***
Great Britain	24	23	31	14	8	3.00
Sweden	12	22	41	21	5	

Consumers' attitude to farm animal welfare-friendly products

Having established in a previous section that most consumers do not think about farm animal welfare when shopping, we shall now consider where consumers actually purchase their meat and livestock products. There were some big contrasts between the different countries. While most consumers in Italy and GB purchased meat from large supermarkets, more Swedish consumers split their purchases between large

supermarkets and small supermarkets or convenience stores. Very little meat in Sweden was bought from the butcher, but sizeable minorities of Italians and British did buy meat from the butcher, especially beef (48% and 25% respectively). Consumers were asked whether it was too time consuming a task to look for animal welfare-friendly products when food shopping. Opinion was fairly evenly divided with slightly more agreeing, or tending to agree, that it was too time consuming in Italy and Sweden, and with GB responding in the opposite fashion with slightly more disagreeing or tending to disagree.

Lastly in this set of questions, consumers were asked if they could easily find animal welfare-friendly products where they usually shop. Results were remarkably consistent across the three countries with almost equal numbers in each country saying they either could find animal welfare-friendly products where they shop or that they could not. However, it is clear from these responses that a substantial proportion of consumers do have trouble finding animal welfare friendly food products and do face relatively high transaction costs in sourcing them.

Sources of information about animal welfare used by consumers

Many consumers do not feel that they are yet as well informed about animal welfare issues as they would wish to be, with marginally more disagreeing with the statement that they feel sufficiently informed than agreeing (Table 8).

Table 8. I feel sufficiently well-informed about animal welfare.

	2 (Disagree)	3	4 (Agree)
	%	%	%
Italy	44	24	31
Great Britain	39	26	35
Sweden	45	26	29

This leads to consideration of what sources or channels of information consumers might most readily use with respect to the animal welfare attributes of the food that they purchase.? The data collected from the survey showed that in each of Italy, GB and Sweden, the vast majority of consumers would use product labels as a primary source of information (over 90% in each country) if information were made available to them in that way, and that more than 80% of consumers would make use of in-store display information (Table 9). In addition, more than some 70% of consumers would use information in the mass media of newspapers, magazines or television.

Survey results suggested that rather fewer consumers would use the modern medium of the internet and website information, in a range between 32% (Sweden) and 42% (GB). It would appear that shoppers are more likely to seek product information at the point of sale at the retail outlet, or from the visual mass media rather than undertaking what might become a protracted electronic search for a particular product or products. But, with the perceived continuing growth in on-line shopping, it might be anticipated that there will, in future, be increasing use made of electronic media by consumers actively seeking information on specific animal welfare-friendly products, producers and retailers. There is some empirical evidence for this from the parallel series of focus groups conducted in Sweden, where

comments pertaining to product research as a determinant of subsequent purchasing behaviour, were made in the groups of consumers that included vegetarians or the more politically active.

Table 9. What source of information might you ordinarily use to discover animal welfare information?

	Product label		In-store information		Internet or website		Mass media	
	Yes	No	Yes	No	Yes	No	Yes	No
	%	%	%	%	%	%	%	%
Italy	96	4	89	11	36	64	75	25
Great Britain	92	8	85	15	42	58	77	23
Sweden	91	9	84	16	32	68	69	31

The conclusion, therefore, is that an increasing number of consumers might be inclined to use product information on the welfare-friendliness of food products should such information be made freely available to them. However, the survey found that many consumers believe that their voice counts for very little as a consumer in seeking behavioural change (such as welfare labelling of food products) in producers or retailers (Table 10), and particularly so in Italy.

Table 10. How much do you think your voice counts as a consumer?

	Little	2	3	4	Greatly	χ^2
	%	%	%	%	%	
Italy	41	19	22	7	11	6.13**
Great Britain	34	20	26	11	9	2.32
Sweden	18	26	35	17	4	

What type of information would consumers find most useful?

If the hypothesis is accepted that consumers would use product information regarding welfare attributes of food products if it were provided, the next issues to be considered are likely to be what type of information consumers would find most useful and the quantity and quality of such information. Survey respondents were asked to rank in importance a number of possible types of information that might usefully be included on product labels. This information had to be ranked as either: 'very important'; 'fairly important'; or 'not important'. The types of information were: a simple welfare assurance mark; a welfare grading system; information on where the animal was kept and information on what the animal was given to eat.

Information on specific farming methods

Consumers were questioned as to whether they considered it important to include information on where animals are kept. Most respondents, particularly those in Italy (80%), stated that it was very important and, in GB and Sweden where the majority was smaller (55% and 50%), a significant number of respondents considered it fairly important (32% and 39%). The number of respondents who thought it not important was consequently low. Similar results were seen in response to the question regarding the importance of what farm animals are fed except, perhaps, for Sweden where the

number of very important responses was lower and the not important responses slightly higher. The Swedish result can be explained, perhaps, by reference again to the previously discussed comments regarding the confidence Swedish consumers have in the welfare-friendly systems already employed by their farmers generally.

Welfare grading systems and food assurance marks

The confidence of Swedish consumers in the quality and safety of food produced in their own country appears to be given further credence if the responses of surveyed consumers to questions regarding the inclusion of a simple welfare assurance mark and/or a welfare grading system on the product label, are considered (Table 11).

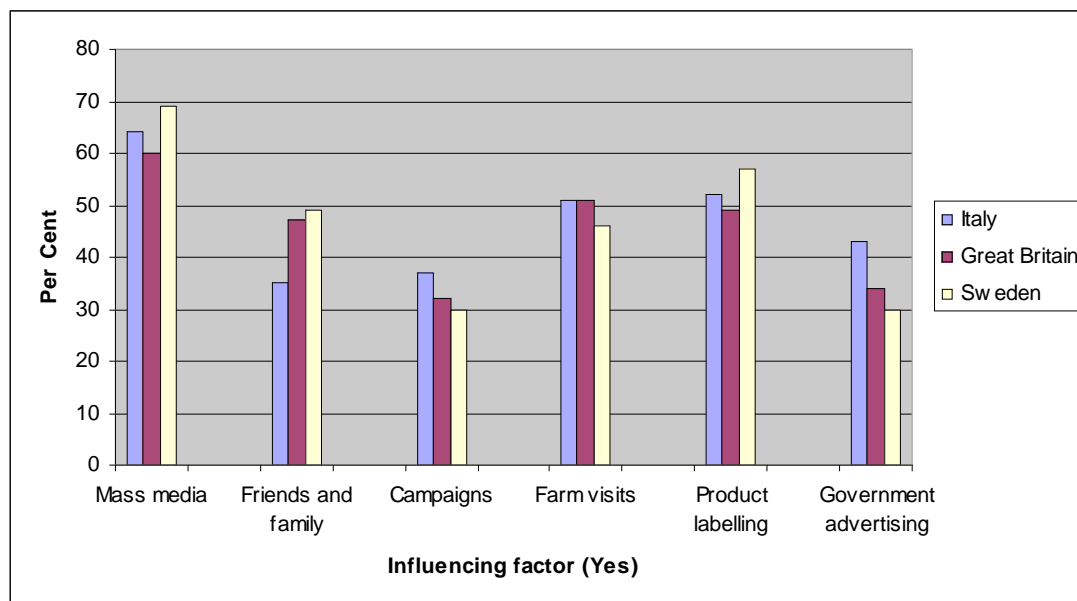
Table 11. Consumer desire for welfare marks and grading systems.

	Assurance mark			χ^2	Grading system			χ^2
	Importance (%)				Importance (%)			
	Very	Fairly	Not		Very	Fairly	Not	
Italy	72	21	7	21.59***	72	22	5	22.83***
Great Britain	63	28	9	11.71***	55	35	11	4.93*
Sweden	36	46	15		39	44	17	

Only 36% of Swedish respondents considered an assurance mark to be ‘very important’ with a further 39% believing a grading system to be ‘very important’. The number who stated that they believed these devices to be ‘not important’ were relatively large at 15% and 17% when compared to consumers in GB (9% and 11%) and particularly so when compared to Italian consumers (7% and 5%). Both the Italian and British consumers responses are significantly different to those from Sweden (at the *** level for both for the assurance mark, and the *** level for Italy and * level for GB for the grading system). It would seem that consumers in Italy would prefer more assurance in the animal welfare-friendliness of the products they purchase through the adoption of welfare assurance and grading schemes than do either Swedish or British consumers. On the other hand, the Swedish results might be described as revealing a degree of complacency on the part of consumers or, at best, an over reliance and over confidence in the efficacy of existing production methods in Sweden.

Consumers and opinion influencing factors

The survey discussed above sought to determine the factors that may influence consumers in forming or shaping their opinions and views on animal welfare issues. It might be anticipated that, with increasing urbanisation and its corollary of people’s decreasing direct involvement with farming and food production, consumers may be increasingly influenced by specific animal protectionist campaigns and interest groups. The survey presented the sample of consumers with a series of dichotomous choice questions to establish whether in recent years their views had been modified or influenced by the opinions and views expounded by: the mass media; friends and family; animal protectionist campaigners; farmers themselves (by way of farm visiting); product labelling and information; and government advertising or information campaigns. The responses received to the six questions are shown graphically in Figure 1.

Figure 1. Animal welfare and consumer influencing factors

The results may be interpreted overall as a measure of how trusting, or otherwise, consumers in the three countries were of the various influencing information sources. It can be seen that Italian and British consumers are, perhaps, marginally more trusting of the arguments of animal protectionist campaigners and of their governments than are Swedish consumers. Additionally, British and Italian consumers appear to be slightly more amenable and positively influenced by the evidence presented to them by farmers when making farm visits. In contrast, Italian and British consumers are less trusting of the opinions broadcast by the mass media, by product labelling and, surprisingly, by their family and friends than are Swedish consumers.

There was general agreement amongst consumers in the three countries that consumers should be prepared to pay higher prices for food if that is necessary to ensure the improved standards of animal welfare in farming. A number of recent studies have found that most consumers have a willingness to pay for higher welfare friendly food products (e.g. Bennett & Blaney 2003).

Discussion and Conclusions

The findings of the survey show that nearly all consumers in GB, Italy and Sweden are concerned about animal welfare. These relate to specific concerns such as where animals are kept and what they are fed, how they are transported and how they are treated at slaughter. Hen welfare was considered of particular importance.

Many consumers do not think about animal welfare when going food shopping and do not like to think that meat came from a live animal. This finding is consistent with the theory of cognitive dissonance and its effect on consumer utility applied to consumers purchasing livestock products and their concerns about animal welfare. A substantial proportion of consumers tried to buy welfare-friendly food products but many found sourcing such products difficult and felt they lacked appropriate information. This suggests that there is a variable, but generally low, availability of products in food stores that have clear animal welfare attributes and that associated

high transaction costs are a deterrent to the purchase of such products in the three study countries.

Consumers are generally in favour of welfare product labelling with an assurance scheme to signify the animal welfare provenance of meat and other animal products. Swedish consumers do not feel that this was as important as their GB and Italian counterparts, probably because they appeared to have more trust in their own farming systems. A significant proportion of consumers is also in favour of a welfare grading scheme. Most consumers had a positive willingness to pay for higher welfare friendly food products. These findings are generally consistent with those of a recent Eurobarometer survey of attitudes of EU citizens towards Animal Welfare (European Commission 2007).

The policy implications of these findings are clear. First, the market is failing to provide the choice of products that consumers want in terms of animal welfare attributes. Second, consumers do not have adequate information on which they can base their purchasing decisions to satisfy their preferences concerning the animal welfare provenance of the food they eat. There is a strong case, therefore, to be made in support of an animal welfare labelling scheme for food products within the EU (and possibly applied to third countries - although this could be challenged under current trade agreements through the World Trade Organisation). Such a scheme could greatly reduce the transaction costs associated with sourcing welfare-friendly products and allow consumers to better satisfy their preferences for food, not only increasing consumer welfare by thus doing, but also potentially improving producer returns (since consumers are willing to pay more for such products). This would enable the market to exert a demand pull that improves the welfare of farmed animals throughout the EU and in third countries (since informed consumers will seek out products with the relevant welfare labelling that they require). Policy makers within the EU are currently considering a unified animal welfare labelling scheme for the EU (CEC, 2006). It is important that such a scheme is appropriately designed and that social science-based studies, such as the one presented here, are used to inform it.

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ANIMAL WELFARE ACCORDING TO NORWEGIAN CONSUMERS AND PRODUCERS: DEFINITIONS AND IMPLICATIONS^{*}

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Introduction

Growing concern about animal production, coupled with recurring food scares, largely explains the increasing attention given to animal welfare as a specific object for public policy and market intervention. National and European legislation on this issue has increased and tightened (Veissier et al. n.d. referred by Bock and van Huik 2007), while private schemes promoted by producers and retailers have multiplied. Buller and Morris (2003) suggest that the intensified efforts to regulate farm animal welfare indicate a renewed consideration of what farm animals actually are, and how and by whom their welfare can be defined.

The objective of this article is to present the definitions of animal welfare that emerged from a study of Norwegian consumers and producers. In doing so, two questions will be addressed: 1) How do consumers and producers define good farm animal welfare? 2) How do consumers and producers view the role of animal welfare regulations and labelling? An important theoretical discussion framing our analysis of these questions comes from studies showing how the concept of nature has been reasserted within the contemporary food supply chain through the development of high quality products (Murdoch and Miele 1999; Miele and Bock n.d.; Buller and Morris 2003). Murdoch, Marsden, and Bank (2000) and Goodman (2003) among others refer to this tendency as a “turn to quality”. Alternative food networks, such as those involving organic production, farmers’ markets and slow food, represent examples of this trend. The aim of these initiatives is often to re-establish a relationship between producers and consumers, through food that is natural, local, genuine, and produced with care. Recent studies on the development of alternative food networks indicate that there may be different ways of understanding nature among actors along the food supply chain (Klintman 2006; Singer and Mason 2006). This suggests that consumers and producers may have different understandings of what naturally produced food is and also of what a good animal life is (Te Velde, Aarts, and Van Woerkum 2002).

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In recent years, animal welfare has been turned into a quality attribute. At the same time, it is becoming more regulated. Regulations and standardisation may in themselves have an impact on how production animals and values related to food are perceived. An interesting example of how the meaning of food may change has been shown in studies of alternative food networks and their expansion to meet a higher consumer demand (e.g. Murdoch and Miele 1999; Guthman 2005; Kaltoft 1999). Studies of organic production, for instance, have shown how organic regulations and food labels have transformed the meaning of organic production from an ethically-oriented and diversified praxis – to become a more standardised food quality attribute in the market (Guthman 2005; Kaltoft 1999).

A discussion of the effects of making animal welfare a food quality attribute appears particularly relevant in the case of Norway. Previous studies have indicated that, contrary to what has happened in other European countries, Norwegian producers have not faced a problem of consumer distrust (Berg 2002; Torjusen 2004; Kjærnes, Harvey, and Warde 2007). Consequently consumer demand for alternative food products has been lower. Studies conducted by Lien and Døving (1996) and Nygård and Storstad (1998) suggest that the two actors at the opposite ends of the chain, producers and consumers, have much in common in their views of quality of farm products. Norwegian agriculture, being relatively small-scale and spread out across the rural areas of the country, may evoke characteristics such as “local” and “natural”. However, these qualities have rarely been communicated explicitly through branding. The knowledge that food has been produced in Norway has been sufficient to elicit these associations among consumers.

However, Norwegian agriculture is undergoing changes. It is being transformed to face a new reality of higher competition envisioned as a result of future WTO negotiations and the prospects of a possible future EU membership (Nygård and Storstad 1998; Almås 2004). What makes the Norwegian case particularly interesting is the fact that the question of animal welfare has been primarily governed and regulated by the issuing of public regulations that going often beyond EU standards (Bock and van Leeuwen 2005). Hence, animal welfare is an “invisible attribute” of Norwegian products, as opposed to the situation in many other European countries (e.g. France, Netherlands, the United Kingdom), where private marketing schemes using food labelling communicate animal welfare as a differentiating factor (Bock and van Huik 2007). Although there are still few instances of animal welfare labels and schemes in Norway, this tendency is emerging here as well. Public bodies promoting organic products and retailers seeking niches (Dulsrud and Vramo 2006) may be regarded as the main driving forces, being motivated by a perceived consumer demand for such products. In a Norwegian context, introducing food quality as a marketing attribute can be interpreted as a strategy to face greater competition.

In the following section, we will briefly describe the research design and methods used in our study. Then we will go on to describe how Norwegian consumers and producers define animal welfare. Finally we will discuss our findings in light of the two questions posed by the article.

Methodology

The article draws primarily upon data collected as part of a European research project on animal welfare, Welfare Quality.¹ This project incorporates qualitative studies of the perceptions and opinions of producers and consumers on animal welfare, as well as an analysis of the retail system and a population survey.² In the present article we use qualitative data on consumers and producers from the Norwegian segment of the study. Focus group discussions were utilised to collect information about consumers' views, while semi-structured interviews were conducted with individual producers. The difference in the methods is due to the different aims of these inquiries as part of the larger study mentioned above.³

Despite the difference in the methods used for gathering our data, we have chosen to analyse both consumers' and producers' points of view on animal welfare by posing the same questions to the data material. Joint analytical categorisation has been developed and utilised. Furthermore, although the research design for both consumers and producers distinguished between different groups of consumers (i.e. urban mothers vs. rural women) and different types of producers (cattle, poultry and pig), this article is mainly intended as a comparison between *consumers* and *producers*. In many respect it presents "the overall picture" – at the possible expense of overlooking intriguing differences and nuances among actors in the two categories, but hopefully for the benefit of identifying interesting contrasts and similarities between the two types of actors⁴.

The consumer study is based on seven focus group discussions conducted during the winter of 2005. In choosing focus groups, we used selection criteria such as place of residence (i.e., urban or rural dwellers), gender, family structure (i.e., mothers, young singles) and age. More specifically, the focus groups consisted of: urban mothers, young singles, couples without children (empty nesters), rural women, seniors (over 55 years of age), vegetarians/political consumers and one consisting of rural hunters. Five to eight participants took part in each group. Two researchers moderated the discussions by posing a few key questions. Our main aim being to investigate consumers' views on farm animal welfare in the context of consumption, questions were addressed accordingly. Focus group discussions, thus, usually started with questions such as: "Where do you usually buy your meat?". Gradually, questions more directly related to human/animal relations and definitions of animal welfare were introduced (i.e. "Do you think about the animal your food comes from? What do you mean by animal welfare?"). Evaluation of information about animal welfare was also discussed, based on examples from existing products/labels. Each discussion was taped and fully transcribed. The analysis, supported by the use of Nvivo software, was initially based on broad pre-planned codes (i.e.

¹ Welfare Quality[®] is a research project co-financed by the European Commission, within the 6th Framework Programme, contract No. FOOD-CT-2004-506508. The text represents the authors' views and does not necessarily represent a position of the Commission, which will not be liable for the use made of such information. For the more information about the natural and social scientific aspects of the project, see www.welfarequality.net.

² See Roex and Miele (2005); Kjærnes, Miele and Roex (2007); Evans and Miele (2007).

³ For more information about how the overall study was conducted, see Evans and Miele (2007) and Roex and Miele (2005), and the country reports for Norway: Skarstad and Borgen (2007a); (2007b); (Forthcoming) and Terragni and Torjusen (2007).

⁴ For this reason, we will in the text refer generically to consumers and producers.

shopping practices; eating practices; knowledge; preferences, dilemmas and barriers; responsibility). In addition, specific codes were generated directly from the data set, using words or expressions that recurred frequently or that appeared particularly relevant for the purpose of analysis, such as “good conscience” or “bad conscience”, “natural”, or “human”.

The producer study was carried out in the period 2004-2007. During this period, qualitative interviews were conducted with 60 pig producers, 60 cattle (dairy and meat) producers, and 61 poultry (egg and broiler) producers. The research was conducted in three phases for each type of production. In the *first phase*, we developed and collected statistical information on the average number of animals per producer, the geographical distribution of the producers, and whether their production was organic or conventional. This information was used to develop a matrix for selecting a sample of producers that were more or less statistically representative according to these variables. An important objective of the research design was to maximise variation in the sample with regard to participation in animal welfare schemes. Thus, in order to maximise variation, organic producers were over-represented. Overall, the sample covers the population of Norwegian pig, cattle and poultry farmers as a whole fairly well. In the *second phase*, the data was collected through semi-structured interviews with mainly open questions. A total of seventy-one face-to-face interviews were conducted on-farm, while the rest were conducted by telephone. A common interview guide was used for all interviews, but with some adaptations. This guide included questions on producers’ definitions of animal welfare, as well as their views on animal welfare regulations and schemes, on control and transport, and on the role of other actors in the food supply chain, including consumers. Almost all of the interviews were tape-recorded, and thorough notes were taken during the interviews. Some of the interviews were fully transcribed. In the *third phase*, the material was analysed. The presentation of producers in this article is partly based on three reports written as deliverables in the Welfare Quality project (see Skarstad and Borgen 2007a, 2007b, forthcoming). The data material was generally characterised by fairly similar types of answers to the various questions posed, witnessing to an already well-established discourse on many of the issues raised. The analysis for these reports was performed by providing an overview and partially summing up the type of responses given to the questions. For this article, additional analyses have been conducted. Since “nature” and “care” emerged as categories defining consumers’ perceptions of animal welfare, we have particularly investigated how and to what extent nature and care (and variants thereof) were invoked by producers.

Framing human–farm animal relations through food: how consumers define a good life for farm animals

The primary objective of this section is to discuss how Norwegian consumers define animal welfare, as well as how they evaluate animal welfare when purchasing food. Previous studies indicate that living conditions of farm animals raised in Norway are generally regarded by consumers as satisfactory; animal welfare issues are not a concern among consumers, and killing animals for food is largely accepted (Lien, Bjørkum, and Bye 1998; Berg 2002; Lavik and Kjørstad 2005; Kjærnes and Lavik 2007). However, this does not mean that Norwegians are not interested in animal welfare issues or that they do not have ideas about what constitutes a “good life” for farm animals (Bugge 1995;

Guzman and Kjærnes 1998; Guzman 2003). But what is a good life and how are animal welfare concerns influencing purchasing practices?

Eating meat with a clear conscience: Freedom, care and nature

Guided by the idea that consumption practices could give us valuable insights into how people define animal welfare, we started the focus group discussions by asking what consumers eat for dinner and where they shop for their food. Concerns about animal welfare were seldom explicit in the description of the family meals. However, some consumers made statements such as: *I never eat ... or I prefer to buy ... (i.e. I never eat chicken; I prefer to buy free-range eggs)*. This usually fuelled the discussion within the group, providing us with information about how animal welfare was discursively framed. Particularly relevant for our analysis were expressions such as *eating meat with a clear conscience*, used to describe positive experiences of eating food of animal origin. The following two examples show how *eating meat with a clear conscience* was framed.

We eat [moose] meat with a clear conscience. You know that the animal has been born and lived in freedom and suddenly it gets a bullet that it barely notices. Well, there is a big difference compared to animals that are forced to stand in stalls and that only get out a couple of times a year.

It is all a question of conscience. But cows that come from a farm where the farmer has a personal relationship to his animals, where he takes care of them, the place is clean, he feeds them, milks them, and doesn't overfeed them – these cows are much happier than the ones kept for mere production, and only for profit.

These statements exemplify two ways of defining animal welfare. In the first one, the idea of eating meat with a clear conscience was associated with the idea of animals having lived in freedom. Although moose are not farm animals, it is not uncommon for Norwegians to have access to this kind of meat. Previous studies (Bugge 1995; Guzman and Kjærnes 1998; Berg 2002) have also indicated that moose tend to represent the ideal farm animals are compared to. The definitions of good animal welfare that emphasise the importance of freedom often tend to include the idea of animals *living as close to nature as possible*, in terms of both being free to have access to a natural habitat and having the freedom to follow natural instincts.

The second statement associates animal welfare with the idea of a caring and personal farmer-animal relationship. In this definition, living in a clean environment and receiving proper nourishment are essential, but not sufficient. Personal contact between the farmer and his animals, and the farmer perceiving his animals as individual beings rather than as part of a mass, were regarded as indicators of good animal welfare. *Farms that don't have thousands of cows are nicer*, and it is good to think of farm animals being *patted and stroked*. When animal welfare was primarily an expression of care, the idea of nature was often used to indicate the normal development of animals (i.e. how fast it grows, or how big it becomes) in contrast to abnormal (unnatural) growth. Cows that are bred to become *mountains of meat and that cannot stand up because their bone structure is too weak*, and hens forced to lay *eggs that are bigger than nature intended*, are

examples of what was referred to as “unnatural”. The ideal, in this case, was the natural relationship between animals and humans in small-scale production: *For those of us who have grown up on farms, and who have seen and know what it means to run a farm, it is the most natural thing in the world to have animals, and for them to be slaughtered.*

Whether good animal welfare was associated with *freedom* or with *care*, and whether *nature* was interpreted as a characteristic of the landscape or as a characteristic of the type of production, a core dimension emerged in the focus groups: animal welfare implies that animals are regarded – and treated – as animals, not as food.

[The animals] are not just chops. They have their own lives until they become our food.

Or, [The farmers] cannot refer to animals they have a relationship to as if they are food. They are responsible for the care of a living being, with the respect due to any living creature.

The fact that animals are sometimes thought of as “food” while they are still alive was regarded as a sign that things have gone too far. Maintaining a distinction between the animal as a living being and its final purpose as food was generally considered both to assure a reasonable standard of life for the animal and to make the food acceptable to eat: *they are animal until they die, but after that they are just food.*

Animal welfare when shopping for food: trust, distrust and responsibilities

A separation between the animal and the food emerged clearly when looking at the purchasing and eating practices. The focus groups’ discussion suggested that people tended not to *visualise that it is an animal when frying my cutlets*. As mentioned above, animal welfare as an explicit concern was almost never mentioned spontaneously when talking about everyday eating. Largely reflecting what has emerged in other studies (Bugge and Døving 2000; Bugge 2005), for most consumers organising meals was a question of time management, household finances, family preferences, a need for variety, and a desire to provide healthy meals for family members. The prevalence of discount shops offering a limited range of choices, combined with lack of specific labels related to animal welfare (Roe and Marsden 2007), may help explain why Norwegian consumers tended not to establish an explicit relation between food, the animal it came from and that animal’s welfare. Other explanations are possible, however. The idea of having to make choices among products because of animal welfare reason was not taken into consideration, as products associated with poor practices were simply not expected to be found among the goods available on the market. The fact that food products are Norwegian was sufficient.

As long as it is produced in Norway, you can be reasonably sure that it is good enough. I think that, on the whole, [animals] here have a good life. The farms are smaller and not as industrialised as in the rest of Europe.

As documented by a number of previous studies, trust in Norwegian food characterises Norwegian consumers (Berg 2000; Kjærnes et al. 2007; Torjusen 2004). The Norwegian consumer (Halkier et al., 2007) tends to rely on the assumption that responsibilities for food are allocated elsewhere than in the market mechanism of supply

and demand: regulation, control, and extensive farm subsidies are regarded as efficient mechanisms for protecting consumers and assuring reasonably good standards in food production. The following conversation within one of the focus groups exemplifies this approach: *I think it's largely a question of trusting the authorities. So in a way, I count on these eggs being safe and a result of good animal welfare. ... I agree with you. I mean, it's like it can't be all that bad. It must be possible to buy regular brand-name eggs without supporting animal maltreatment.*

On the contrary, scepticism was often expressed about the efficacy of market mechanisms in resolving animal welfare issues. As claims of better animal welfare are often associated with higher prices, the suspicion of being “conned” sneaked in: *Is it really that much better, or am I just being duped into buying something that is more expensive?*

Summing up, Norwegian consumers tended to express satisfaction with the current way of dealing with animal welfare issues, which does not demand specific responsibility or the need of a reflective attitude in the act of purchasing.

When animal welfare was an explicit issue in purchasing practices, eating game was frequently mentioned as a strategy for coping with the ambivalence of eating meat from domesticated animals⁵. Furthermore, meat from farm animals living in accordance with the definition of good animal welfare mentioned above, were preferred (i.e. lamb). An interest in – and an awareness of – the existing few welfare-friendly labeled products often reflected an interest in health and quality issues, suggesting a shift of focus from the animal to the product. Meat from animals that had had a good life was for instance preferred as safer and tastier. As said in one focus group: *To be honest, when I go shopping and I see it says 'organic eggs', to be completely honest, I don't think 'oh, these hens have had really nice lives'. I think that they are healthy products for me. Or, as commented by another: I think free-range products taste much better. So we buy free-range chickens and other products along those lines. I think it's important that the animal that's going to end up on my plate has a good life before it gets there.*

Framing human–farm animal relations through production: how farmers define a good life for farm animals

Compared to consumers, farmers viewed animal welfare much more in terms of the economic and technical aspects of operating a production unit, confirming findings in a previous study of Norwegian farmers (Risan 2003). In recent years, new official regulations have been issued for the production of cattle, pigs and poultry. According to most producers, good animal welfare meant ensuring a set of conditions within certain technical, regulatory and economic limits or societal limits. Recurrent elements mentioned by producers as important for good animal welfare were providing enough food and water, providing good ventilation, maintaining proper temperature and climate, keeping the animals healthy and clean, maintaining a dry lying area, providing good litter, and generally taking good care of the animals.

⁵ On the concept of dealing with ambivalence when eating meat, see also Schipper et al. (2006) and Te Velde et al. (2002).

Good animal welfare means that the hens have access to food and water and the right temperature, humidity and so on. So that they will thrive, and then they will produce well too. (poultry producer)

As the quotation shows, economic considerations were brought in as an important part of many producers' definitions of good animal welfare, as well as in their definition of being a good farmer (see also Burton 2004:197). Good animal welfare was emphasised by many as necessary to achieve good production results. Moreover, some held the animals' performance as an indicator of good welfare. Consequently, many producers – especially pig or poultry farmers – considered taking care of the animals and achieving a high yield as mutually reinforcing goals (see also Borgen and Skarstad 2007).

You have to take good care of them. You are dependent on that if you want to make a good living. (pig producer)

A majority of the farmers considered the welfare of their own animals and of animals in general in Norwegian animal husbandry to be basically good (see also Storstad and Bjørkhaug, 2003).

Nature in the producers' discourse

Another study, part of the Welfare Quality project, identified two types of definitions of animal welfare among producers: the first group of farmers referred to animal welfare in terms of the provision of the animals' basic biological needs, good animal health and high zootechnical performance; the other group defined animal welfare on the basis of the animals' opportunity to express natural behaviour and focused on comfort (Bock and van Huik 2007). Most Norwegian producers belonged more or less to the first category. However, some producers used the phrase “natural behaviour” or similar expressions when defining animal welfare. As many of them were organic producers⁶, this supports the findings of previous studies showing that organic producers generally employ the latter type of definition (cf. Bock and van Huik 2007; Segerdahl 2007; Lund, Hemlin, and Lockeretz 2002). In addition, some production systems or technical devices were associated with allowing the animals to live more “freely”. The biggest change in Norwegian husbandry in recent years is the transition from individual stalls with tied-up animals or enclosures for small groups, to group-housing or free-range systems. Group housing was introduced in the pig sector in 2000. For cattle, the transition period lasts until 2024. For egg producers, the transition period for the abolishment of conventional cages is set to end by 2012, as for other European countries⁷. Egg producers and some cattle producers who favoured free-range systems emphasised the possibility of movement and interaction with other animals, or more “natural behaviour”:

⁶ Organic animal husbandry, which requires outdoor access, constitutes only a small part of Norwegian animal husbandry. In 2004, 0.16 per cent of breeding sows, 2.13 per cent of dairy cows, and 1.68 per cent of laying hens aged more than 20 weeks were organic (Rogstad 2005).

⁷ Norway is not part of the EU, but is required to implement animal welfare regulations issued by the EU pursuant to an amendment to the EEA agreement (Veggeland 2002).

[What matters is]... that the animals can satisfy their needs and follow their natural instincts; that they don't have to stand on chicken wire and try to dust bathe on chicken wire – that's not good; and that they are able to perch and be outside. You can see that the hens really enjoy themselves when they are out.
(poultry producer)

Most producers, however, did not refer explicitly to the animals' need to express natural behaviour. Some of them pointed out that animal husbandry can never be natural. A few pointed out that nature in such a context is an "empty phrase". Thus, most located farm animals within their current production and not in nature.

For me, in my situation as a farmer with production animals, animal welfare means that the animals thrive as much as possible within the limits I can offer them. It would probably be best for the animals to walk around freely, not to produce milk at all and to be with their calves, but I cannot offer them that. I have to keep them tied up [...] but I do what I can so they will not suffer, get hurt, or get sick. (cattle producer)

Egg producers who defended the use of cages emphasised that hens are safer and less vulnerable to pecking and cannibalism in cages than in free-range systems. Also, some claimed, contamination and disease are easier to control in cages:

It is probably not exciting to sit in a cage, but in a 3-hen cage at least you are safe. (poultry producer)

The effects of animal welfare regulations

The farmers' views on the implementation of group housing or free-range systems brought up not only the issue of what a natural, good life is, but also the question of the future of Norwegian agriculture and the effects of making animal welfare a regulatory object. Most egg and dairy producers still keep their animals in conventional cages and in tied-up systems, which means that large investments and changes need to be made in the coming years. Many of the cattle producers were positive to a transition to loose housing. Some, however, feared that loose housing would imply the end of small-scale agriculture – forcing many producers to quit because of the large investments necessary to implement this change.

You will get industrial-scale agriculture like they have in England. (cattle producer)

Egg producers who keep their hens in cages raised similar concerns. Moreover, a few of the producers that were interviewed associated loose housing with a more detached relationship between farmer and animal, since it brought to mind a larger-scale, more professionalised system of agriculture. As indicated in a previous study, producers seldom discuss the human-animal relationship. Exceptions are when the human-animal relationship is made relevant as a political issue or when it can be referred to through anecdotes and funny stories (Risan 2003). When we asked the producers to describe their own relationship to their animals, their descriptions varied from being 'professional' to 'very close'. Pointing to the greatest problem or challenge, however, some cattle and pig

producers in particular shared the consumers' concerns about "industrialisation" and "factory production" (see also Brandt and Bolsø 1992 referred in Storstad and Bjørkhaug 2003), with reference to the lack of contact between human and animals in such production.

Animal welfare is pretty good here, but it is under pressure. Probably because of the time squeeze. [...] It is a lot easier having efficient farm buildings with loose housing because a lot of things take care of themselves – which means more time for the farmer to supervise. [...] There isn't necessarily anything wrong with rational units [...] but the consequences are much, much greater if you let things slide in a large operation. That is the danger of having a fully mechanised milking system: you get fooled into thinking you don't have to do anything yourself, just check the computer every now and then. But it is during milking that you have contact with the cows and can tell how they are doing. (cattle producer)

The ambivalence about loose housing and the possible effects of more stringent animal welfare regulations show that they were met with scepticism by some producers. Others pointed out that costly and time-consuming regulations and demands for documentation should not make it impossible to run a production operation. Some emphasised the need for similar animal welfare regulations in Norway and other European countries; otherwise high costs would undermine Norwegian agriculture. However, many producers were also in favour of strict animal welfare regulations in light of the same goal: to ensure the survival of Norwegian agriculture. Many saw strict animal welfare regulations as a possible competitive advantage for Norwegian agriculture. Making animal welfare a food quality attribute of Norwegian products was therefore considered a strategy to meet greater competition from industrialised agriculture abroad.

As mentioned in the introduction, private animal welfare schemes are another possible strategy for improving animal welfare. However, when we asked producers whether they would consider joining a private animal welfare scheme with much more rigorous animal welfare regulations than the official regulations, in order to communicate good animal welfare through branding as a means of gaining market shares and achieving premium prices, many of them were sceptical and unfamiliar with this line of thinking:

I think that this shouldn't be necessary. If you have animals, the standards should be fixed: either you are allowed to produce food from animals, or you are not. As far as the consumers are concerned, I doubt that the majority care. (poultry producer)

This scepticism was linked to several factors (see also Borgen and Skarstad 2007). First, it was claimed that there was no need for such schemes in Norway since animal welfare is already good. Second, it was argued that it would be better to have strict and uniform regulations to ensure good welfare for all animals. Third, a few farmers feared that differentiation according to animal welfare would create an A- and B-team among producers, making the ones not part of an animal welfare scheme less "trustworthy" in the eyes of consumers. Fourth and last, it was claimed that animal welfare could be just

as good among producers who had not joined the scheme, and that schemes could open up for cheating. But there were also producers who would consider joining such schemes, because it would mean an extra challenge and be a way of attaining a better price.

Discussion

Eder (1996) (referred in Murdoch and Miele 1999) describes two views of nature that characterise the modern experience: the view of nature as a utilitarian object and a romantic view of nature as a source of ultimate goodness. Consumers, when imagining a good farm animal life, referred to a romantic view of nature, where animals could live freely. At the same time, they emphasised a close and caring relationship between farmers and their animals as important for animal welfare. What seems to characterise the consumers' narratives of a good farm animal life was the identification of farm animals both as cultural subjects belonging to society (Risan 2003), and as natural subjects (Guzman 2003) belonging to nature. Producers, on the other hand, anchored their idea of a good life for animals largely in their own daily practices. More strongly than consumers, producers linked animal welfare to the technical conditions necessary to ensure profitability and good welfare, a discourse that was also influenced by the official standards. Thus, they related more explicitly to animals as "utilitarian objects". With production framing their opinions, many producers seemed to hesitate to use nature as a category in defining animal welfare. Yet we found that both freedom/nature and care were dimensions that seemed to structure parts of the producers' discourse. A difference between the two groups, however, was that in the case of producers these dimensions were negotiated *within the limits* of their current, material economy to a greater degree. With the exception of some vegetarian consumers – in Norway constituting a very small group (Kjærnes and Lavik 2007) – the consumers' trust in Norwegian agriculture, and their praxis of eating meat, showed that consumers also ultimately shared an understanding of farm animals as 'objects of use' (cf. also Buller and Morris 2003). The consumers' lack of association between the food they ate and the animal it came from, can be interpreted as a way of handling the tension that might arise from operating with a "double structure" of relating to farm animals as beings both outside and within society.

Thus, both consumers and producers viewed a good animal life as involving a balance between freedom, care and economy, which may suggest that domestic animals cannot be reduced to either nature nor society (cf. Tovey 2003). As observed by Leach (1964), some animals are too wild to be eaten, others are too close, others are too disgusting; only some of them are *good to eat*. This calls for a focus of what constitutes a *good relationship* to farm animals - making them good to eat, instead of a focus on whether farm animals are and should be used for societal purposes, or whether they should be protected and regarded as untouched nature. As we shall see in the next section, such good qualities are inherent in Norwegian agriculture for many producers and consumers.

The regulated animal

Our study largely confirms the mentioned alliance between primary producers and consumers (see Nygård and Storstad 1998; Lien and Døving 1996). In our study, this alliance was expressed through many consumers' and producers' common expression of their scepticism towards an industrialised, profit-driven system of agriculture. Although

there were some producers who did not believe that animal welfare is poorer in the EU, producers and consumers generally tended to converge around the idea that – all in all – farm animals in Norway have a better life than farm animals raised in other countries. Industrialised agriculture, as is the norm in *other* countries – with farmers showing little *care* for and having minimal contact with the animals, treating them as *objects* for the purpose of making *profit* – seemed to both many consumers and producers to be the most egregious example of a bad life for animals. Correspondingly, many expressed support of the small-scale agriculture they associated with greater animal welfare, although there were also exceptions – particularly among the producers.

The turn to quality production is often associated with the emergence of alternative food networks, that are being established as an alternative to industrialisation and commodification of food on a global scale (i.e. Murdoch et al. 2000). Our findings confirm previous studies linking quality production to the “local” dimension, supporting an analysis of animal welfare regulations as a way of promoting an alternative to industrialisation and globalisation. Murdoch and Miele (1999) and Murdoch et al. (2000) characterise the turn to quality as a movement from a generic, standardised production system towards forms of production that are more specialised and dedicated. But there are also important elements in our material that open up for another interpretation. These elements witness to the possible effects of making animal welfare “a regulatory object” for the purpose of establishing high quality food production. In Norway, animal welfare is likely to be transformed into a quality attribute in order to promote Norwegian agriculture in anticipation of increased international competition. Thus, animal welfare regulations are established not only as an *alternative* to a globalised and industrialised agriculture, but as a strategy for competitive advantage in a globalised world of large-scale operations (see also Borgen and Skarstad 2007). As we have seen, there were some – especially cattle producers – who feared that the issuing of more stringent animal welfare regulations would lead to a more industrialised and professionalised system of agriculture. They feared that the consequences of strict animal welfare regulations would be the demise of small-scale agriculture because high investment costs would make it difficult for smaller producers to continue. There was also scepticism among both consumers and many producers about making animal welfare a commercial attribute and a differentiating factor in the market. Findings from this study, indicate that consumers may not want animal welfare to become a market and consumer responsibility.

The transformation of much organic production – from a small-scale, ethically motivated activity into a more standardised, regulated and economically motivated activity – provides an interesting frame of reference for reflecting on the possible effects of making animal welfare a regulated food quality attribute (cf. Kaltoft 1999; Guthman 2005). The increasing relevance of regulations may imply a progressive transformation of the notion of animal welfare, from a practice based on farmers’ experience into a notion of animal welfare that basically relies on following a set of rules. As a consequence, the connection with the animal as a bodily creature may be weakened: regulating animal welfare may tilt our perception of farm animals towards a more abstract and standardised notion, with animals becoming “well-produced food commodities” rather than “well-treated farm animals”. As we saw, both consumers and many producers emphasised the importance of a good, close relationship between farmers and their animals. Regulations

– if they turn animal welfare into merely a “food quality attribute” that is defined largely through technical prescriptions and results in large-scale professional agriculture (as might be the case in Norway) – may mean a shift away from many consumers’ and also quite many producers’ conceptions of what constitutes a good animal life in important respects. Paradoxically, animal welfare regulations may thereby contribute to redefining the divide between animal and food: making the animals become more “food”, rather than fundamentally “animals”. “The regulated animal” – if thought of as food all along – may then contrast with what has emerged as a main aspect of good animal welfare: that farm animals are animals, and not just food.

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SEGMENTATION BASED ON CONSUMERS' PERCEIVED IMPORTANCE AND ATTITUDE TOWARD FARM ANIMAL WELFARE*

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Introduction

Animal welfare in general, and more specifically in livestock production, has become a major issue of interest, not only among direct interest groups involved in the food production chain, such as producers, retailers, government and consumers, but also in a wide variety of scientific research disciplines. This tendency of a general increased interest in animal welfare can be explained to a large extent by the prosperity level in the Western society (Seamer 1998). Food supply has largely exceeded food demand, which has turned markets into demand-driven economies where the goal of exchange and marketing is to better meet consumers' needs, demands and preferences. Together with the growing influence of post-materialistic values – of which interest in farm animal welfare is just one example – on product attribute evaluation and food choice decision-making, this has recently led to numerous studies about public and citizen concerns on the one hand (Verbeke 2002; Kanis, Groen, and De Greef 2003; Boogaard, Oosting, and Bock 2006; Lassen, Sandoe, and Forkman 2006; Maria, 2006; Van Poucke et al. 2006), and consumer attitudes and behaviour in relation with farm animal welfare on the other hand (Harper and Henson 2001; European Commission 2005; Frewer et al. 2005; Vanhonacker et al. 2006). This research focus was anticipated by Verbeke and Viaene (1999), who concluded, based on the analysis of a 1998 consumer sample in Flanders, that animal welfare and acceptable production methods emerged as key attention points for the future of livestock production and marketing, as well as public and consumer acceptance of animal-based food products.

However, the interpretation of the concept of farm animal welfare differs considerably between different interest and stakeholder groups, and its conceptualisation is heavily influenced by convictions (*opinions about the way things are*), values (*opinions about the way things should be*), norms (*translations of these values into rules of conduct*), knowledge (*constructed from experiences, facts, stories,*

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and impressions) and interests (*economic, social and moral interests*) (Te Velde et al. 2002). This framework explains why the livestock production and processing sector and the broader public tend to speak different languages when talking about animal welfare (Vanhonacker et al. 2007). Producers tend to position themselves as knowledgeable and rational actors, while they dismiss the concerns of the lay person as emotional and uninformed. The public, however, often associates the industry's interest in animal welfare as strictly economic and profit oriented, and view their own citizen and consumer viewpoint as ethically motivated (Kendall et al. 2006).

Public attitude toward animal welfare

Also within the broader public, diverse opinions appear. Despite the occurrence of differing opinions and the relevance of the topic, little research has focussed thus far on a conceptual approach to determinants of public or consumer attitudes to animal welfare. Kendall et al. (2006) aimed at filling this gap and built a theoretical framework on an extension of existing literature in sociology, mainly stemming from American studies. Many of the determinants described in their study were compatible with determinants discussed in European literature. Kendall et al. (2006) distinguished three sets of factors as structural determinants for attitudes about animal welfare: (1) place-based urban-rural factors; (2) other social structural factors; and (3) individuals' unique animal-related experiences. With regard to the first set, utilitarian motives were used to hypothesize a lower concern about animal welfare among persons with a rural background and/or experience with farming. This was confirmed by Verhue and Verzeijden (2003) and Frewer et al. (2005), who found that people living in rural neighbourhoods evaluated the state of animal welfare more positively.

The second set of factors was comprised of gender, socio-economic class, age and family status. Women expressed a higher concern with animal welfare as compared to men. The task of women as primary family caretakers, and as being more likely to engage in household tasks that put them in contact with animals, like caring for pets and preparing food, were considered as possible explanations for this gender difference. Similar conclusions are found by Burrell and Vrieze (2003) and Verhue and Verzeijden (2003). Next, lower income categories and less educated persons were hypothesized to express a greater concern for animals, which has also been referred to as the underdog-hypothesis (Kendall et al., 2006). Opposite results were found by Burrell and Vrieze (2003) and Verhue and Verzeijden (2003), where especially higher educated people expressed a higher concern for animal welfare. Further, age was hypothesized to be inversely related to the concern for animal welfare and to be related to one's life-cycle stage, hence subject to a change over time depending on the evolution and change of factors in a person's direct social environment, such as family relations (Kendall et al. 2006). Verhue and Verzeijden (2003) confirmed this hypothesis indicating a higher concern toward animal welfare among younger people. Finally, with regard to family status, expectations were that people with dependent children would express less concern about animal welfare, since they have to attribute time and energy toward their own offspring instead of to nonhuman others.

With regard to the individuals' experiences, a positive relationship with concern for animal welfare is hypothesized for people who do not hunt, have a pet, are vegetarian, are more involved in cooking and food shopping, and have higher concerns about the environment and food in general. With regard to vegetarianism, the

hypothesis was grounded on the worldview accompanying vegetarianism, which encompasses greater awareness of the origin of one's food (McDonald 2000).

Animal welfare related consumer behaviour

At present, there is a lack of studies that combine the citizen and the consumer perspective on farm animal welfare, i.e. studies that consider both variations in citizen attitude toward animal welfare on the one hand, and variations in the impact of animal welfare as a product attribute on consumers' food choice decisions on the other hand. Such studies are relevant because the market for high welfare products is rapidly evolving, due to some contemporary changing food patterns. Increased disposable incomes have caused that food shoppers in many markets can afford to pay premium prices for differentiated quality products. As a result, food has begun to provide an emotional as well as a functional role in consumers' lives. At the same time, consumer confidence in food production has dropped due to some consecutive food scares in Europe at the end of the nineties, in particular within the livestock production chain. Furthermore, consumers are increasingly aware of the association between food intake or their dietary behaviour, and their personal health and overall well-being, with consumers believing that food produced in a more natural way will suit them better and provide them with more benefits (Grunert et al. 2000). Considering these tendencies, a higher willingness to pay for high welfare products can be assumed. However, many studies have criticised claimed consumer willingness to pay, referring to the duality between consumers and citizen (Korthals 2001; Bennett, Anderson, and Blaney 2002; Carlsson, Frykblom, and Lagerkvist 2004; Liljenstolpe 2005). Individuals tend to respond to questionnaires as citizens and in this role, they claim to pay more attention to animal welfare. However, when they make a choice in the outlet as a consumer, they turn out not to be equally willing to pay for more animal friendly products (Aarts and Te Velde 2001). Moreover, animal welfare is an ethical issue, and as a consequence highly sensitive to social desirable answering, for example in survey research and interview questionnaires. As a consequence, some deduced that consumers do not prioritise animal welfare considerations while shopping for food. Such conclusions, however, may be too general and based on sample average scores, without acknowledging for different segments that might exist. Only few studies noticed the existence of a specific segment taking animal welfare more into account when shopping. For example, Grunert et al. (2004) stressed the potential market opportunities related to animal welfare for consumer-oriented product development.

More specifically, little information is available with respect to the segmentation of individuals based on their perceived importance of animal welfare when purchasing food in general (thus in their role as a consumer), and to our knowledge the segmentation of individuals based on the relative importance attached to animal welfare when purchasing food has not yet been studied in depth. Hansman (1999) found four consumer segments based on general food consumption patterns: the 'cooperating consumer', with a traditional food pattern; the 'responsible consumer', who feels highly responsible for the environment, health and animal welfare, and has mainly a vegetarian and ecological consumption pattern; the 'competitive consumer', who likes to eat exclusive; and the 'rational consumer', who is considered as a mainstreamer as he/she cannot be differentiated from other consumers. Meuwissen and van der Lans (2004) identified six consumer segments in The Netherlands: Environmentalists, Ecologists, Animal Friends, Health Concerned, Unpronounced and Economists. Both studies

clearly show that market segments exist that take into account animal welfare to different degrees when purchasing food. In the latter study, Ecologists, Animal Friends and Health Concerned reported a significantly higher willingness to pay for pork produced with attention to animal welfare. Together with the Environmentalists, these segments scored animal welfare as a top three product attribute.

Scope and Objectives

The aim of our study is to perform a segmentation, based on the two topics discussed above: i.e. public attitude toward farm animal welfare, in relation to livestock production in Flanders, Belgium, and consumers' relative importance attached to farm animal welfare as a product attribute during food purchasing decisions. The contribution of this approach is two-folded. On the one hand, positioning different segments based on those two dimensions can help to better understand different viewpoints within society (the citizen-consumer duality), yielding a valuable basis to improve the societal (public and market-related) debate about the issue. On the other hand, segmentation is a necessary tool in order to understand how to make higher welfare foods relevant to different consumers and how to position these products in a competitive marketing environment. From this angle, distinct consumer profiles can be established which can provide insights as to how to target, communicate and convince these distinct groups to purchase higher welfare products. We will use attitude toward animal welfare as an indicator for the market opportunities of high welfare products, while the relative importance of animal welfare as a product attribute will be considered as the leverage or selling proposition for how to promote and communicate these products. The strength of this segmentation exercise is that it combines a rather concrete consumer-related measure (relative importance attached to farm animal welfare as a product attribute) with a more abstract public opinion (attitude toward animal welfare). These results should provide a more balanced picture with respect to the existence of socially and ethically engaged segments, integrating both evaluations from a public and a consumer perspective.

Materials and Methods

Sample and procedure

Survey data were collected through self-administered questionnaires during April 2006 in Flanders. A quota sampling procedure with gender, age, living environment (rural versus urban) and province as quota control characteristics was applied. Respondents were selected in a first phase through a wave of web-based questionnaires and supplemented with a more targeted distribution of paper questionnaires to ensure that the predetermined quota were approximated.

The total sample consisted of 459 respondents (Table 1). With respect to gender, we found a representative distribution. The age of the respondents ranged from 18 to 75 years, with an average age of 37.8 years ($SD = 14.8$), which is somewhat below the population's average age (40.2 years). Concerning living environment, we strived for a 35/65 ratio urban/rural, but a small over-representation of urban respondents was sampled. Finally, a small over-sampling of the provinces West- and East-Flanders (resp. + 6.2% and + 4.7%) appeared at the expense of Antwerp and Limburg (resp. – 5.9% and – 4.6%) (NIS, 2004). With regard to family status and education as external control variables, the sample family size approached the distribution in the population,

notwithstanding a somewhat higher share of households without children and an over-sampling of higher educated people.

Table 1. Socio-demographic characteristics of the sample (n=459); quota control variables are compared to the characteristics of the Flemish population (source: NIS, 2002)

	Sample	Population		Sample	Population
Gender (%)			Education (%)		
Male	48.5	49.3	≤ 18 years	32.3	
Female	51.5	50.7	> 18 years	67.7	
Age			Living environment (%)		
18 to 23 years	18.8	11.4	Urban	38.9	35.0
24 to 37 years	32.4	26.6	Rural	61.1	65.0
38 to 53 years	31.7	44.2			
> 53 years	17.1	17.8	Region (%)		
Mean (years)	37.8	40.2	West-Flanders	25.2	19.0
(S.D.)	(14.1)		East-Flanders	27.5	23.0
Family size			Antwerp	21.7	27.7
1 or 2 persons	52.5		Limburg	8.9	13.3
3 or 4 persons	32.7		Flemish Brabant	16.8	17.0
5 or + persons	14.8				

Measurement of constructs

First, 13 product attributes were probed for their perceived importance (PI) in the food purchasing decision process of animal food products on a five-point interval scale ranging from “totally unimportant” to “very important”. The product attributes were: safety, quality, reliability, taste, origin, health, price, appearance, freshness, environmental friendliness, availability, animal welfare, and production method. PI reflects the individuals’ reaction from a consumer perspective, i.e. someone who has to weigh and evaluate different product attributes before coming to a purchase decision.

Second, respondent’s attitude was measured in terms of evaluative belief with respect to the current state of animal welfare in Flemish livestock production (EV). Therefore the statement: “Do you believe the current state of farm animal welfare in Flanders in general is...” was used. This item was measured on a seven-point interval scale anchored at the left pole by “very poor” and at the right pole by “very good”, with “moderate” as the mid-point of the scale. This second measure is much more a public opinion, which is presumed to be held rather independent of the consumption decisions.

Third, consumption of beef, pork, poultry, fish and meat substitutes was scored on a six-point self-reported consumption frequency scale, ranging from “daily” to “never”.

Fourth, both subjective and objective knowledge about farm animal welfare were probed. Subjective knowledge was assessed using four relevant items of the five-item scale described by Flynn and Goldsmith (1999) and measured on a five-point Likert-scale. Items were: “Compared to an average person, I know a lot about animal welfare”; “I have a lot of knowledge about how to evaluate the welfare of farm animals”; “I have a lot of knowledge about how farm animals are kept”; “My friends consider me as an expert on farm animal welfare.” Objective knowledge was investigated using five statements, corresponding with the major five groups of farm animals in Flanders: “Barn eggs are from chicken that have outdoor access” (not

correct); “Male pigs are castrated because otherwise the meat can have a bad smell” (correct); “Broilers are slaughtered at the age of 4 months” (not correct); “A dairy cow gives milk only after calving” (correct); “Double-muscléd beef cattle mostly calve via a Caesarian section” (correct). Respondents could either agree or disagree with each statement. To account for guessing, respondents were also asked to indicate how confident they were about their answer to each item on a scale from 1 (*very uncertain*) to 5 (*very certain*).

Fifth, consumer opinions toward information related to farm animal welfare were assessed using six statements, each scored on a five-point Likert-scale. Statements were: “Labels should indicate more clearly the rearing conditions of the animals”; “Information about animal welfare is too little available”; “Animal welfare should be controlled more severely”; “Animal welfare should be guaranteed through a label on the product”; “I’m willing to pay more for food produced with more attention to animal welfare”; “More information about animal welfare would influence my meat consumption”.

Sixth, variables representing the three sets of structural determinants for the attitude toward animal welfare as described by Kendall et al. (2006) were included. The place-based factors were represented by living environment and farm experiences. Respondents were asked in what type of place they live (rural or urban). The response is coded 1/0 and is based on individuals’ self-identification. To tap experience with farming, respondents were probed with the following statements on which they could answer ‘yes’ or ‘no’: “I have / my parents have a farm”; “My grandparents / other relatives have a farm”; “Close neighbours / good acquaintances have a farm”. Other structural factors involve gender, age, education, and presence of children. Finally, being a vegetarian (yes/no) was included as variable measuring individuals’ animal-related experience.

Analyses procedures

Data were analysed using SPSS 12.0. First, hierarchical clustering with Ward’s Method as cluster method, and K-means cluster analysis were performed to obtain segments. Bivariate analyses including cross-tabulation with Chi²-statistics, Independent Samples T-test and One-Way ANOVA comparison of means were used to profile the clusters in terms of behaviour, knowledge, information opinions, and structural determinants for attitude toward animal welfare.

Given the high reliability coefficient of the four subjective knowledge items (Cronbach’s alpha = 0.93), we calculated a summated subjective knowledge score corresponding with a score ranging from 4 to 20. Also with respect to objective knowledge, we computed a cumulative score. For each objective knowledge item, a wrong answer was coded as zero, while a correct answer was coded with its corresponding reported certainty level, i.e. ranging from one to five. As a result of this coding procedure and after summation across the five items, an overall range from zero to 25 was obtained for objective knowledge.

Results

Segmentation analysis

Segmentation variables

The first segmentation variable pertains to the perceived importance attached to animal welfare in the food purchasing decision-process. Since this perceived importance has little meaning in absolute terms, though only relative as compared to the perceived importance attached to other product attributes, a relative score was computed for each of the 13 attributes assessed by the respondents. This score, corresponding with the relative importance, was computed using (1):

$$RI_i = \frac{13 * PI_i}{\sum_{i=1}^{13} PI_i} \quad \begin{array}{l} RI = \text{relative perceived importance} \\ PI = \text{absolute perceived importance} \end{array} \quad (1)$$

A *RI*-score below the value of 1 indicates that the specific product attribute ranks among the less important product attributes, while a score above 1 corresponds with a relatively important product attribute. As the focus will be on the relative perceived importance of animal welfare, we will use the abbreviation *RI_{AW}* in further discussion as reference for the relative perceived importance score assigned to the attribute animal welfare. *RI_{AW}* ranges from 0.27 to 2.60 within the sample, with a mean score of 0.98 (SD=0.23).

The second segmentation variable is the respondent’s attitude in terms of evaluation (belief) of the current state of animal welfare in Flemish livestock production (EV). EV ranges from 1 to 7 with a mean score of 4.13 (SD=1.49). For the clustering procedure, we have opted to work with the standardised score (z-score) of both variables rather than with the actual scores, in order to obtain a segmentation that better puts the relative position of the segments into perspective. In further discussion, *absolute perceived importance score* and evaluation of farm animal welfare in the current Flemish livestock production refer to the mean scores of the non-standardised variables *RI_{AW}* and EV.

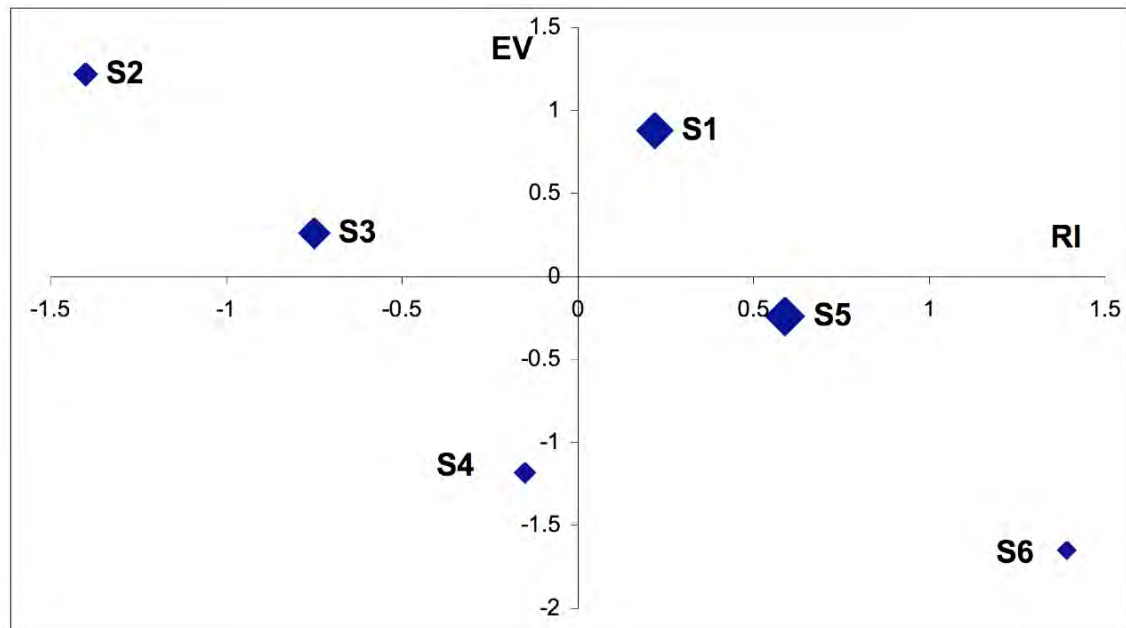
Cluster analysis

A hierarchical clustering followed by a K-means cluster analysis was used to determine the optimal number of clusters (so-called segments) yielding the highest degree of differentiation. This resulted in a six-cluster solution (Table 2 and Figure 1).

Table 2. Profile of the segments on the segmentation variables (n=459)

	S1	S2	S3	S4	S5	S6
Segment size (% of sample)	21.1	12.9	18.7	12.6	23.5	11.1
Absolute perceived importance (PI)	4.14	2.51	3.15	3.95	4.55	4.98
Relative importance (RI _{AW})	1.03	0.66	0.81	0.95	1.12	1.30
RI z-score (segmentation variable)	0.22	-1.40	-0.75	-0.15	0.59	1.39
Evaluation (EV)	5.44	5.95	4.53	2.36	3.76	1.67
EV z-score (segmentation variable)	0.88	1.22	0.26	-1.18	-0.24	-1.65

Figure 1. Mapping of the cluster centres according to relative importance (RI z-score) and evaluation (EV z-score) of farm animal welfare; the size of markers reflects cluster size.



Segment 1 (S1; 21.1% of the sample) corresponds to respondents who attached high absolute importance to animal welfare when purchasing animal food products. However, all product attributes received a high perceived importance score among these consumers. As a consequence, their RI_{AW} is rather neutral, thus animal welfare is considered moderately important compared to other product attributes. Nonetheless, animal welfare received a higher importance than some other production system-related attributes, such as production method and environmental friendliness. With respect to their evaluation of farm animal welfare in the current Flemish livestock production, an above average EV was found (“rather good” to “good”) (Table 2).

Segment 2 (S2; 12.9% of the sample) corresponds to respondents who claim not to take animal welfare into account in their food purchasing decision-making, given that no other product attribute received a lower RI -score than the attribute animal welfare. Their most important product attributes when purchasing animal food products were freshness, quality and taste. Also, people belonging to S2 reported the most positive EV.

Respondents belonging to Segment 3 (S3; 18.7% of the sample) showed a lot of similarities with S2 regarding the absolute perceived importance of the product attributes. However, their opinion is not that sharply pronounced, meaning that a similar ranking occurred, with smaller differences between the relative scores. Moreover, in contrast to the very positive EV given by S2, S3 is somewhat less positive, evaluating animal welfare mainly as “moderate” to “rather good”.

Next, Segment 4 (S4; 12.6% of the sample) mirrors S1 in terms of the standardised RI_{AW} and EV (Figure 1). Similar as for S1, high perceived importance scores are attached to all product attributes. However, respondents belonging to S4 attribute less importance to animal welfare as compared to environmental friendliness and production method.

Segment 5 (S5; 23.5% of the sample) is the largest segment and is composed of respondents who indicate to take animal welfare quite heavily into account, i.e. to the same extent as quality and health attributes, and even to a higher extent than taste and safety. With respect to EV, a rather average score was found. This segment mirrors S3 with respect to the segmentation variables (Figure 1).

Finally, Segment 6 (S6; 11.1% of the sample) is very concerned about animal welfare, as is expressed first in a very high PI of animal welfare and second in a very poor EV. Animal welfare emerged as the most important product attribute, followed by the two other production system-related attributes, and outweighing the quality traits and taste. Moreover, product appearance, availability and price are relatively considered as much less important among S6-members as compared to the other segments.

Profiling of the clusters

Determinants of animal welfare perception

Table 3 presents a set of variables within the three sets of determinants of public attitude toward animal welfare as described by Kendal et al. (2006). First, with regard to the place-related variables, we found no significant differences between the segments related to living environment, although S1 and S2 were composed of the highest amount of rural inhabitants. Living environment is not associated with RI_{AW} ($T=0.86$, $p=0.39$), while we found a marginal influence on EV ($T=1.79$, $p=0.074$), with a more positive evaluation of current farm animal welfare given by rural inhabitants ($Mean_{urban}=3.97$; $Mean_{rural}=4.22$). Concerning farming experience, we found pronounced differences. The respondents who have themselves a farm or have parents with a farm are distributed over S1, S2 and S3, with the highest relative share corresponding to S2 (21,6%) ($Chi^2=43.09$, $p<0.001$). Segment 1 also includes a relatively large share (13,3%) of respondents whose grandparents or other relatives have a farm ($Chi^2=14.98$, $p<0.01$). The percentage of close neighbours or good acquaintances having a farm does not differ significantly between the segments ($X^2=9.18$, $p=0.102$). Ownership of a farm or parents having a farm has its consequences with regard to RI_{AW} and EV: a significant lower RI_{AW} ($T=3.65$, $p<0.001$) and a more positive EV ($T=10.95$, $p<0.001$) appeared among respondents with the highest farming experience. Conversely, a lower degree of farming experience did not longer impact RI_{AW} ($p>0.1$), while it still showed a significantly positive relationship with EV ($p<0.1$).

Second, we included gender, age, education level and the presence of children as other social structural variables. For gender, significantly more men belong to S2 ($Chi^2=39.55$, $p < 0.001$), whereas women rather belong to the S5 and S6. In general, we found that females ($Mean=1.03$) attached more importance to animal welfare relative to other product characteristics as compared to men ($Mean=0.93$) ($T=4.44$, $p<0.001$) and that they evaluate the current state of animal welfare as more negative ($Mean_{male}=4.45$, $Mean_{female}=3.82$; $T=4.59$, $p<0.001$). Also for age, we could make a significant distinction between the segments ($Chi^2=36.59$, $p<0.001$). Segment 1 is composed of a relatively low amount of people aged between 24 and 37, while we found an over-representation of the two oldest age categories. A similar age distribution appeared for S2, although deviations from the distribution in the total sample were smaller as compared to S1. Segment 3 is characterised by a rather low amount of youngsters, while S4 consists of a large group of respondents aged between 24 and 37. Finally, S5 does not show large deviation from the samples' age distribution, whereas S6 has an over-

representation of the two youngest age categories. We discovered no age-effect on RI_{AW} ($F=0.96$, $p=0.41$), while EV was clearly age-dependent ($F=8.13$, $p<0.001$). The second age category expressed the lowest evaluation, significantly different from the two oldest groups. The remaining three categories do not differ significantly from each other. Furthermore, education level does not differ between the six segments ($\chi^2=2.73$, $p=0.74$), and did not associate with neither RI_{AW} ($T=0.0.239$, $p=0.811$) nor EV ($T=0.998$, $p=0.319$). Finally, between-segment differences appeared for the presence of children in the household ($\chi^2=36.31$, $p<0.01$). We saw the highest share of households with children for S1 and S2, while within S6, only one fifth of the households had children. No association of the presence of children was found with any of the segmentation variables ($p>0.1$).

Table 3. Determinants of animal welfare for the different segments (n=429), frequency distributions (%); total sample characteristics are mentioned between brackets

	Sample	S1	S2	S3	S4	S5	S6
<i>Place (% yes)</i>							
Urban	(38.9)	33.7	30.5	46.4	41.4	38.9	43.1
I / parents have a farm	(6.1)	13.3	21.6	3.7	0	0	0
Grandparents / other family have a farm	(29.1)	43.2	35.2	21.3	28.6	21.4	26.5
Close neighbours / good acquaintances have farm	(40.1)	50	48.2	30.9	38.9	35.0	40.8
<i>Social Structural Location (% yes)</i>							
Male	(48.5)	54.2	82.5	44.0	48.3	36.1	33.1
Age <24	(18.8)	17.7	18.6	12.9	20.7	21.3	23.5
Age 24-37	(32.4)	15.6	25.4	36.5	39.7	36.1	49.0
Age 38-53	(31.7)	38.5	32.2	35.3	27.6	31.5	17.6
Age 54+	(17.1)	28.1	23.7	15.3	12.1	11.1	9.8
Mean age (years)	(37.8)	42.5	41.0	37.4	35.2	36.0	32.6
Higher education	(67.7)	63.2	67.8	67.9	74.1	65.7	72.5
Presence of children	(48.9)	63.2	66.1	52.4	38.6	43.5	19.6
<i>Individual Experience</i>							
Vegetarian (% yes)	(12.2)	0	0	2.4	21.1	9.4	62.0

Third, we included vegetarianism as a single-item within the set of individual experiences. Where we found almost no vegetarians in S1, S2 and S3, the majority of respondents within S6 (60%) indicated to be vegetarian. S4 and S5 were positioned in between, with respectively about 20% and 10% being vegetarian. Consequently, this difference in segment composition was significant ($\chi^2=148.86$, $p<0.01$). Also, we noticed a highly significant association of vegetarianism was found with both segmentation variables ($p<0.1$).

Meat and meat substitute consumption

Differences in claimed consumption behaviour between the segments are clearly reflected in their reported consumption frequency of meat, fish and meat substitutes (Table 4). With claiming to eat meat mostly every day, the segments S1, S2 and S3 appeared as the heaviest meat consumers. Segment 6 on the other hand reported a very low meat consumption frequency, while S4 and S5 indicated a meat consumption frequency in between these two extremes. Reported fish consumption frequency, was lower for S6 as compared to the other segments. Consumption frequency of meat

substitutes was the inverse of the meat consumption frequency, with a very regular consumption of meat substitutes in S6 and a very low consumption frequency by S1, S2 and S3.

Table 4. Profiling of the segments based on meat and meat substitute consumption frequency; mean scores

	S1	S2	S3	S4	S5	S6	Sample
<i>Consumption frequency^s</i>							
Beef	2.51a	2.61a,b	3.01b,c	3.64c	3.29c	4.98d	3.22
Pork	2.61a	2.59a	2.92a,b	3.81c	3.40b,c	4.90d	3.25
Poultry	2.91a	2.72a	2.89a	3.63b	3.40b	5.00c	3.32
Fish	3.34a	3.39a	3.23a	3.42a	3.24a	4.31b	3.42
Other meat substitute	5.18c	5.35c	5.07c	3.96b	4.37b	2.69a	4.55

^s: Six-point frequency scale: 1 = every day; 2 = several times a week; 3 = weekly; 4 = monthly; 5 = less than monthly; 6 = never ; different letters (a-b-c) indicate significantly different average scores using ANOVA and BONFERRONI post-hoc test

Knowledge

The level of both subjective and objective knowledge about livestock production practices correlates quite well and is not equal among the six segments ($F=10.89$, $p<0.001$; $F=5.21$, $p<0.001$, respectively). S6 and S2 reported the highest subjective knowledge about farm animal welfare. S3 on the other hand indicated the lowest subjective knowledge, and all other segments did not differ significantly from each other (Table 5). In line with the reported subjective knowledge, S6 and S2 turned out to be also effectively the most knowledgeable about animal welfare issues based on the objective knowledge score (Table 5). S3, S4 and S5 were the least knowledgeable.

Information variables

The different segments show clear differences with regard to the evaluation of the current information about animal welfare, the expectation they have about animal welfare information and the stated impact of information on their behaviour. The lowest score for each of these issues was given by people belonging to S2. With regard to the first four information items as they are presented in Table 5, a neutral average segment score was found within S2. This indicates that they are not against a more intensive and more clear information provision, but that they are also not explicitly asking for more information. The difference with the other segments was the largest with respect to the attitude toward more severe controls on animal welfare. The low interest in information is also reflected in a very low expected impact of receiving more information on their meat consumption. Furthermore, S2 was the only segment which disagreed to pay more for food produced with more attention for animal welfare.

S1 and S3 are somewhat more positive toward the information statements. They score neutral (mean value approaching the value of 4) on the statements related to more and clearer information provision and on more severe controls. Somewhat contradictory with this request is their neutral attitude toward the expected impact of more information on their meat consumption and the limited willingness to pay for food produced with specific attention for animal welfare. Probably, this could be driven by their daily consumption of meat.

Table 5. Profiling of the segments based on knowledge and information variables

	S1	S2	S3	S4	S5	S6	Sample
<i>Knowledge</i>							
Subjective	12.4b	13.1b,c	10.2a	11.2a,b	11.3a,b	15.5c	12.02
Objective	12.7a,b	14.7b	10.7a	10.2a	10.6a	14.2b	11.97
<i>Information statements</i>							
Labels should indicate more clearly the rearing conditions	3.89b	3.17a	3.78b	4.43c	4.34c	4.82d	4.05
Information is too less available	3.85b	3.08a	3.92b	4.40c	4.38c	4.44c	4.02
Animal welfare should be controlled more severely	3.84b	2.81a	3.99b	4.57c	4.55c	4.94d	4.12
Animal welfare should be guaranteed by a label	4.00b,c	3.19a	3.78a,b	4.47c,d	4.51d	4.86e	4.13
I am willing to pay for products with more animal welfare	3.56b	2.32a	3.21b	4.19c	4.32c	4.78d	4.73
More information about animal welfare would influence my choice	2.93b	2.08a	2.95b	3.60b,c	3.78c	3.63b,c	3.19

Different letters (a-b-c-d-e) indicate significantly different average scores on five-point scales using ANOVA and BONFERRONI post-hoc test

In contrast, the remaining segments (S4, S5 and S6) expressed a high need for more and clearer information and for more severe controls on animal welfare. While this need is high for S4 and S5, it is extremely high for S6. Despite this strong request for information, only a moderate expected impact of receiving more information on the meat consumption is indicated by these segments. Explanations pertain to a segment being largely vegetarian (S6), hence not willing to eat meat whatever the amount of information provided, or to segments consuming already a large amount of meat (S4, S5), hence hardly leaving room for further increase. Regarding willingness to pay, we found a high score corresponding with S4 and S5 and a very high score for S6. Especially concerning S6, this high willingness to pay is in line with the low perceived importance of price in the food buying decision process.

Conclusion

Driven by several socio-economic evolutions, animal welfare has gradually come to the forefront in recent societal debates. Despite the fact that animal welfare is subject to an increasing amount of research, theoretical development and empirical evidence related to the topic within sociology and consumer science research is rather limited and often focused on the description of findings on a general population level. However, opinions related to animal welfare are very divided and often conflicting. Moreover, seen the ethical character of animal welfare, public opinion or reflections from a citizen perspective do not provide a straightforward picture that is relevant for actual consumer behaviour and food choice. A gap in literature exists with respect to combining public citizen-oriented measures as well as consumer-oriented approaches.

In this paper, we start from the conceptual approach presented by Kendall et al. (2006), which aimed at fostering the sociological debate about attitudes toward animal welfare. With the performed segmentation analysis, we provided insights in the existence of different population groups or segments, who fuel the debate starting from

a different and often conflicting perspective, and second, we identified specific market opportunities for high welfare products associated with compatible marketing strategies.

We achieved a six-cluster solution. Seen the resulting characterisation of the segments in terms of structural determinants of animal welfare; of consumption frequency of meat and meat substitutes; of knowledge about animal welfare; and of attitude toward information about animal welfare, we could basically interpret the six segments as four groups with very distinct features. S2 and S6 appeared as two extreme groups that stand on their own, and that have a completely opposite attitude and belief structure in relation with farm animal welfare as well as a very opposed consumption behaviour pattern. The remaining two groups could be composed through a combination of two segments: S4 and S5, and S1 and S3, respectively. With regard to their features, they are positioned in between the two extreme groups, with S4/S5 rather tending to S6, and S1/S3 rather tending to S2.

Along the axis of the attitudes toward animal welfare, the characteristics of the different groups largely corresponded with the set of determinants defined by Kendall et al. (2006) as affecting the attitude toward animal welfare. With regard to S2, especially the highest degree of farming experience and a high share of rural inhabitants, together with the predominantly male composition seemed to explain the very low concern about the current state of farm animal welfare. S6 on the other hand, which expressed the highest concern toward farm animal welfare, differed most strongly from the other segments in terms of the share of vegetarians (highest), their age profile (youngest) and the share of households with children (lowest). All these characteristics were described as determinants for a higher concern toward animal welfare. The perspectives of S2 and S6 toward farm animal welfare are strongly opposed, most likely because of their different type of involvement with animal welfare. S2 is mainly socio-economically involved with agriculture and livestock production, in the sense that farming activities are a part of their daily lives and a source of livelihood in their living environment. S6 is mainly involved with animal welfare because of personal moral and ethical considerations. Both segments display a very consistent attitude-value profile (as individual in their role as a citizen or member of a particular societal group), and behavioural profile (as individual in their role as consumer, thus with respect to food choices). Most likely, the societal debate about farm animal welfare will continue to be fuelled mainly by those two societal groups with opposing interests. The position of the other segments is bridging between these two extremes with regard to Kendall et al.'s (2006) determinants. Depending on the strength of arguments in the debate, through new personal experiences, changes in their social and living environment, and exposure to information, these segments may evolve over time in either direction. Hence, from a communication point of view, these segments are particularly interesting as target audiences because of their rather moderate predisposition toward farm animal welfare.

The segmentation exercise is especially valuable with regard to identifying market opportunities and formulating marketing strategies for high welfare products for each of the groups. An increased market opportunity for high welfare products is assumed with an increased concern for the current state of animal welfare. As a result, we see little or no animal welfare-related marketing possibilities for people belonging to S2, who are very positive toward the current state of animal welfare. In addition, they indicate a very low importance for animal welfare as a product attribute in their food purchasing process. Their low expressed information need and willingness to pay

corroborate with this. The group composed of S1 and S3 are also considered as a group with rather low marketing opportunities for high welfare products. Seen their modest willingness to pay and information need, together with animal welfare not being ranked as a very important product attribute, high welfare products will need very strong tangible benefits (e.g. taste, tenderness, ...) without high price premiums for eventual market success with these segments.

Next, the group composed of S4 and S5 can be considered as a real marketing opportunity segment. This group reports concerns about animal welfare and does not neglect animal welfare as a product attribute in the food purchasing decision process. Moreover, they express high information needs and willingness to pay for higher welfare products. This group comprises 36.1% of the sample, hence constituting a considerable market. Within this group, animal welfare is important but not the top priority. Consequently, we do not expect a very strong commitment in terms of behaviour, i.e. people may not consistently buy high welfare products each time. Seen the importance attached to animal welfare and the concern toward it, it will be important from a marketing point of view, to do efforts in order to better match behaviour with attitude within this segment. Possible strategies pertain to stimulating awareness; a strong focus on associations of high welfare products with for instance a better taste or with benefits in terms of health and safety; and stimulation of trial purchases through free-samples and promotions.

Finally, S6 also yields clear marketing opportunities. Seen their limited size (11.1%) and about 60% of them being vegetarian, this group constitutes only a small market for meat and other livestock products. Notwithstanding the small size, this group has a very high commitment and a very high willingness to pay. To most effectively reach this niche market, products should strongly focus on high animal welfare standards, for example through clear and credible labels backed up by trustworthy control and traceability mechanisms, and personal reassurance.

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FARMERS' RELATIONSHIP WITH DIFFERENT ANIMALS:
THE IMPORTANCE OF GETTING CLOSE TO THE ANIMALS.
CASE STUDIES OF FRENCH, SWEDISH AND DUTCH
CATTLE, PIG AND POULTRY FARMERS.*

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Introduction

Serpell (2004) identified that human-animal relationships are subject to the two primary dimensions: those of affection and utility, which together combine to shape human attitudes towards animals. Serpell noted that animals with a high utility 'often seem to be precluded from becoming the objects of people's positive affections, presumably because such animals are usually harmed as a result of their utility' (2004: p.146). He used this to explain the ambivalence inherent in human-animal relationships.

In the light of this, what is the nature of farmers' relationships with their animals? Livestock animals have a utilitarian function, often expressed in commercial terms, and farmers are involved in running a business. Although some might consider farming and, hence, farmer-animal relationships as essentially utilitarian and exploitative because they involve producing animals that are going to be slaughtered (Lund and Olsson 2006), everybody who personally knows farmers, knows that they care about their animals and feel empathy or even affection. Studies in Ireland (Tovey 2002) and the Netherlands (Van Haaften & Kersten 2002) revealed the deep and genuine sorrow that farmers felt when their cows were killed during the recent Foot and Mouth Disease outbreak. Following Lund and Olsson (2006) the fundamental ethical problem of killing farm animals is mediated and becomes acceptable when there is an emotional attachment between the farmers and their animals and when the animals have a 'good life' before their death (see also Singer 1975).

Caring about animals is also an important element of farmers' identity and culture (Tovey 2003; Porcher 2006) and they see this as a crucial characteristic of being a 'good farmer' (De Greef et al, 2006; Dockes and Kling 2006; Lassen et al 2006; Bock and Van Huik 2006, 2007a, b; Bruckmeier and Prutzer 2006). Society also expects farmers to look after their animals with diligence and care. Fraser (2001: 175) points out that public trust and approval of husbandry systems is based on 'the pastoralist image of humans caring diligently for animals' and of agriculture as way of life. Modern production methods, with their more

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industrial, factory-like farming systems challenge these notions. Rollin (1995) argues that high stocking levels in such systems de-individualize animals in farmers' eyes. Porcher (2006) elucidates how the modernization of farming dehumanizes the work of livestock farmers as it constrains their ability to relate to their animals in the way they would like.

Previous research into the relationship between farmers and their livestock revealed how human-animal interaction affects the welfare and productivity of animals (Hemsworth 2003; Hemsworth et al. 2000; Hemsworth and Coleman 1998; Lensink, Veissier and Florand 2001). These studies demonstrated how good care improved the wellbeing of the animals in terms of health and productivity. But as they showed, it also worked the other way around. Seabrook and Willkinson (2000) showed that many farmers liked being close to their animals and found positive interaction with them one of the specific joys of being a farmer (Dockes and Kling 2006). Hemsworth (2003) demonstrated that good relationships with animals mediated the effects of stressful or painful husbandry procedures. It lightened the burden on animals as well as on farmers and made some parts of the work less unpleasant, less dangerous and less stressful for both. It facilitated working with the animals, made it more enjoyable and as such added to both the quality of farmers' lives as well as to the animal's wellbeing and productivity. One might argue, then, that empathy with animals is a functional or even necessary quality for achieving the instrumental aims of farming. A 'good' and successful farmer needs to care about his or her animals. Yet the question remains whether farmers care the same for all their animals and the extent to which different sectors and husbandry systems influence this. This is especially relevant in the light of social concerns about the effect that modern day intensive husbandry systems may have on farmers' affection and empathy for their animals (Kanis et al. 2003; Te Velde et al. 2002).

Wilkie (2005) recently developed a framework for evaluating human-livestock relations, in which she describes the relationship in terms of varying degrees of attachment and detachment. Drawing on Merton (1976 in Wilkie 2005) she argues that the human-animal relationship is characterized by ambivalence as farmers have to move between 'the instrumental impersonality of detachment and the functional expression of compassionate concern' (Merton cited in Wilkie, 2005: 217). Based on research among British livestock farmers (both professional and recreational) she distinguishes between four types of human-animal relationships:

- Concerned detachment
- Concerned attachment
- Attached attachment
- Detached detachment

In 'concerned detachment', farmers handle their animals with care, but relate to them in a detached manner: seeing them not as individuals, but rather as a function of commercial production. The relationship is impersonal and indifferent. According to Wilkie this is characteristic of farmers who rear livestock for slaughter or who work with large numbers of animals. In 'concerned attachment' the relationship between livestock and farmer is more personal. The farmer appreciates the animals for more than their production utility and sees them as individuals. This tends to happen in situations where there is more personal contact with the animal and is more likely when animals are used for breeding, as these animals stay on the farm for a longer period of time, and when the farmers are more physically involved with them. In 'attached attachment' farm animals are regarded as outdoor pets and receive preferential treatment. Wilkie considers that it is uncommon among commercial farmers who depend for their incomes on the utility that the animals provide, and only found this attitude

among recreational ‘hobby’ farmers. Nevertheless, we’ll see below that in France and Sweden, some commercial cattle farmers and also a few pig farmers in Sweden expressed attitudes and feelings which are very close to this definition. The relation of ‘detached detachment’ is most common among farmers who only deal with their animals from a distance and do not handle them directly; leaving them room to regard livestock purely as a commodity.

Wilkie’s analysis suggests that affection and attachment are dependent on the function of the animal and the phase at which an animal is in its production cycle. These factors influence the frequency, intensity and intimacy of farmers’ contact with their animals. In a similar vein, Seabrook (1994, 1986) found that the animal production system affects farmers’ attitudes towards their animals. His research confirmed that the frequency and intensity of contact with individual animals are of great importance in this regard.

This article seeks to provide a deeper understanding of the factors that influence farmers’ relations with animals and focuses on the relevance of sector (e.g. beef or dairy cattle), animal species, housing systems and any national differences. It seeks to draw out how the relationship between farmers and their animals is influenced by the context of daily caring practice. It uses Wilkie’s framework of attachment as it is derived from practice and recognizes the importance of the paradoxical aspects of farmer-animal relations that are simultaneously emotional and professional. While Wilkie compared how professional and recreational farmers related to their cattle (and in some cases sheep), we concentrate here on professional farmers but compare differences between species, sectors and husbandry systems. In this way we hope to generate more insight into those aspects of production systems that can be strengthened in order to ensure positive human-animal relations, for the sake of both animal welfare as well as farmers’ quality of life.

Research methods

The article combines the results of several case studies among pig, cattle and poultry producers in France, the Netherlands and Sweden.¹ We talked with farmers about their beliefs and attitudes about animals, animal welfare and good farming and their relationship with their animals. In total we interviewed 480 farmers, 87 of whom were organic farmers and 31 of whom were involved in specific animal welfare production schemes (a combined total of 25%). The farmers were engaged in the pig (meat production and breeding), cattle (dairy, beef and veal production) and poultry sectors (egg and meat production). Farmers engaged in organic agriculture and specific animal welfare production schemes generally worked with more ‘natural’ and animal-friendly housing systems, such as free-range outdoor systems for fattening pigs and broilers. About sixty farmers were interviewed in each sector in each country. As the interviews with Dutch pig farmers did not include the issue of farmer-animal relationship, we excluded them from this analysis (see table 1). No Swedish veal producers were interviewed, as there is no veal production sector in Sweden. The sample is not representative of the populations of livestock farmers in these three countries. Rather, its purpose was to explore the *diversity* of farmers’ attitudes towards animals and animal welfare; and it was therefore necessary to include a more than representative share of farmers engaged in organic agriculture and specific animal welfare schemes in each of the various production sectors.

¹This study was carried out as part of the EU research project WELFARE QUALITY®. For more information about the project see www.welfarequality.nl. For more information about the various case-studies see Bruckmeier and Prutzer 2005, 2006, 2007; Souquet, Kling-Eveillard and Dockès 2005; Bertin, Dockès and Klink-Eveillard 2006; Kling-Eveillard, Mirabito and Magdelaine 2007; Van Huik and Bock 2006, 2007; and for cross country reports Bock & van Huik 2006, 2007, 2008..

Table 1: Sample characteristics

	France	Sweden	Netherlands	Total
<u>Pig</u>				
Breeding & fattening	43	23		
Breeding	1	20		
Fattening	18	17		
Conventional	54	50		104
Organic	4	10		14
Specific animal welfare schemes	4			4
<u>Cattle</u>				
Dairy	20	14	24	
Beef	27	33	19	
Dairy & beef		13		
Veal	13		13	
Conventional	48	47	40	135
Organic	12	13	10	35
Specific animal welfare schemes			10	10
<u>Poultry</u>				
Meat	30	30	30	
Egg	30	30	30	
Conventional	31	45	48	124
Organic	11	15	12	38
Specific animal welfare schemes	17			17
	181	180	119	480

A basic, common questionnaire, with semi-structured questions, was used for the interviews. Each country team was free to rephrase the questions to make them more appropriate to their national context. Most interviews took place on the farm, although some interviews were carried out by telephone, especially when Avian Influenza made some poultry farms inaccessible. The interviews lasted for an average of one and a half hours and were recorded on paper or on tape. A content analysis of the texts was carried out with the help of QSR NUD*IST Software N6 (in Sweden) and ATLAS.ti (in the Netherlands). The analysis focused on the diversity of farmers' attitudes towards animals and animal welfare.

The following section describes how farmers perceived their relations with animals in different production sectors, using the framework and concepts established by Wilkie (2005). From there we move on to drawing out the factors that influence the relations between farmers and their animals. In the conclusion section we look back on Wilkie's framework and try to elaborate on the mechanisms in animal production that influence farmers' attachment to their animals.

Farmers' relationships with their animals

Cattle: from concerned (and sometimes even attached) attachment to detached detachment

Most cattle farmers have a sense of attachment to their cows, with the bond ranging from loose to very close. Some French farmers described their relationship as one of deep attachment, which almost resembled a family relationship. They say that they could not live without an affectionate relationship with their animals. More than half of the Swedish farmers referred to the relationship as akin to one with family-members, friends or colleagues.

“As a cattleman you feel strongly allied to some animals. Some are easier to handle than others. I have one cow who has not given any milk for six months, but she is a good animal. Had not I liked her so much, she would have been slaughtered long ago. I had another cow that could not be milked, but she fitted so well with the rest of the herd that I could never think of getting rid of her.” (Swedish dairy farmer)

Even farmers who described their relation as rather detached and who pointed out that they kept the animal for gaining an income, also underlined how much they liked their animals. They liked caring for them, stroking and patting them and being physically close to them.

Concerned attachment and sometimes attached attachment

Cattle farmers distinguished between their pets and their cattle, feeling closer and more attached to their pets, although at times a cow could become almost a pet in terms of attachment. Farmers also differentiated among their cows and generally felt closer to suckling and milking cows. This was partly a result of the number of animals and partly because of the length of the time that they stayed on the farm. Both increased the knowledge of the animal as individual.

“Every cow is an individual in my view... When they come inside the stall, the relationship becomes more personal. You do not talk or spend time with a heifer every day. The milk cows you see twice a day. You can see straight away if they are not feeling well. With heifers, just have a look at them, feed them and then walk away.” (Swedish dairy farmer)

Farmers also found the close physical contact involved in milking a cow as very important in developing an emotional bond with dairy cows. French dairy farmers described their relationship with their dairy cows as a lasting relation of mutual trust which made milking the cows more pleasant, safer and also more profitable, as it increased milk production.

“You have to create a balanced relationship with the anima, so as to make a profit, but in exchange we have obligations. It’s not just a relationship of power.” (French dairy farmer)

Some French and Swedish cattle farmers could not imagine their life without animals. They felt really emotionally attached to some of their cows and felt bad when they had to sell them to the slaughterhouse. Their relationship can be qualified as attached attachment, even if they made their living by keeping cows and did not consider them the same as pets. Some Dutch and French dairy farmers underlined the importance of breeding their own cows, sometimes working with bloodlines that had been established by their ancestors, which added special meaning to the relationship.

“The cows mean a lot to me. Since I was fifteen, I’ve been responsible for breeding and I enjoy that a lot. It’s a challenge keeping the production in order with relatively cheap sires, and following your own mind a little bit. Without these cows, I wouldn’t even have become a farmer, although I’m less emotional about it now. Without these cows, I might have emigrated, but I can’t take them with me, can I?” (Dutch dairy farmer).

Concerned or detached detachment

Bull and veal farmers described their relationship with their animals in a different way, with a considerable number referring to the animals as tools for production. Nearly a third of the Dutch veal farmers claimed that they did not have a relationship with their animals, but kept their calves strictly for business motives. This did not preclude feeling responsible for and taking good care of them as living and sentient beings but they did not feel attached to the individual animals.

The importance of the housing system for calves came again to the fore when several French farmers described how the status of calves changed with the implementation of group housing systems. By seeing the animals more than when they were in small individual pens, and by watching them play and interact with other animals, the farmers rediscovered the animals as ‘real’ animals instead of living ‘production material’. This also helped to re-individualize their stock.

“Veal calves used to just bring in the money, we didn’t see the animals the same way...we work differently with them now because we are in proximity to them – we have to go and get them, we know them better, we live with them...we’re dealing with a herd...” (French veal farmer)

“We work differently with the animals, we are more in contact with them... we learn the tag number, before it was just the pen...there are some veal calves I often think about.” (French veal farmer)

In general however there were usually too many calves for farmers to recognize them as individual animals. Dutch veal farmers explained that the large number of animals and their short stay on the farm inhibited them from developing a real bond with the animals. Most farmers said that they did not differentiate between individual calves and only treated them individually when an animal fell ill.

“Every calf is being thought of, but there is no individual attention for each calf, unless they are ill.” (Dutch veal farmer)

Beef farmers also described how they consciously kept the animals at an emotional distance as these animals were destined for slaughter. In addition, the size and strength of bulls was an important factor influencing their relationship. Most Dutch beef farmers said they avoided getting too close to them as a safety precaution.

“It is a kind of truce. If they don’t hurt us, we don’t hurt them. But we are very fond of them. We take the best possible care of them. After we’ve just refreshed their bedding, and they are lying in the straw, I think that there is nothing more beautiful than seeing a couple of bulls lying in a thick layer of straw. As long as they’re here they receive perfect care, but in the end, when they are standing in line at the slaughterhouse, it is the end of the story. And you mustn’t fret about it.” (Dutch beef farmer)

In France and in Sweden, a few dairy farmers with large farms, expressed to be most interested in the technical aspects of their production. Their relationship with animals can be described in terms of ‘detached detachment’. They followed and observed the technical parameters of milk production rather than the situation and the welfare of their animals.

In terms of Wilkie's framework, cattle producers' relationships with their animals generally range from concerned attachment to concerned detachment, with a few farmers who felt either attached attachment or detached detachment. Farmers felt concerned attachment for their dairy cows and sometimes for a calf that became special because it had been in need of individual care and attention. Most commonly, farmers described their relationship to bulls and calves as concerned detachment, and sometimes detached detachment. In part this is a result of self-protection and conscious avoidance of attachment to animals that will soon be slaughtered (see also Te Velde et al. 2002) or for reasons of physical safety. In addition to this the frequency and intimacy of human-animal contact were important factors, and these are partly influenced by the type of animals and the need for close bodily contact during the daily practice of caring for and handling them (see also Porcher 2006). The housing system also influenced this, as different systems offered differing opportunities for getting close to the animals and seeing them as individuals and animals. The nationality of the farmers did not greatly influence their attitudes or relationships with their cattle, even if Swedish or French farmers expressed sometimes an "attached attachment" attitude towards some cows.

Pig production: concerned attachment to concerned detachment

This chapter only concerns French and Swedish farmers. Many farmers described their relationships with their pets and their cows as being closer and of a higher status than their relationships with pigs.

"They're not like dogs; we don't exactly take them for walks one by one!" "I am not at all familiar with the pigs, whereas I know each cow." (French farmer)

The main factor preventing pig farmers from developing close emotional bonds with their animals was the large number of animals that most farmers have. Like cattle farmers, pig farmers distinguished between different types of animal – in this case pigs reared for fattening and those kept for reproduction. Farmers generally felt more attached to their breeding sows than to their fattening pigs. This was partly due to sows staying on the farm for a longer period, but also to the stronger interaction they have with individual animals and the physical contact involved in caring for sows and piglets. The difference between animals that were kept for procreation and slaughter was also important (see also Wilkie 2005).

Again farmers described how they deliberately avoided getting attached to animals that would only be staying on the farm for a short period of time and would be slaughtered.

"A fattening pig is not endearing, whereas you can have a relationship with the breeding part of the herd." (French farmer)

"Yes, it is often difficult. The fattening pigs are not the same, but when it comes to sows and boars there are more feelings. When the boars are sold even my husband is soft. When we are selling cattle I won't get involved in loading them. When they are sold you have to forget [about sending them to slaughter]. It's OK to send the fattening pigs to the slaughterhouse. But I do recognize some of the sows, and that is strenuous." (Swedish pig farmer)

Although many farmers emphasized the importance of having a relationship with the animals and of enjoying it, the relationship generally did not extend to affection. Most pig farmers acknowledged their pigs as sentient beings and said that they tried to ensure good living

conditions for them and to avoid suffering, although they did not develop a particular relationship with them.

“I do not have an emotional relationship with the pigs but a professional technical view. I have a good understanding of the animals, but do not pat them. I see them as a tool for production and feel satisfied if I can do something good for them and I can see that they feel good. If you want to make some money from the animals you have to like them.” (Swedish pig farmer)

Very few pig farmers in France talked about their relationship with their fattening pigs in terms of affection, such as ‘feeling akin to the pigs’, seeing the pigs as ‘friends’ or ‘my children’ and ‘the nice feeling from being together with the animals’. Meanwhile, about half the Swedish farmers interviewed felt akin to their fattening animals, especially when they also had breeding activity on farm.

Many farmers with integrated systems (breeding and fattening), expressed an affectionate attitude towards their sows, but more frequently in Sweden where this attitude concerned more than half the farmers.

“I treat my pigs about the same way as my children....the sows are like dogs, they follow after me.” (Swedish farmer)

Overall, however, farmers did not perceive pigs to be as likeable as cows.

“I do not have an emotional relationship to the pigs but look at them from a professional and technical point of view. I am good in understanding the animals, but do not pat the animals. I see them as a tool for production and feel satisfied if I can do something good for them and when I can see that they feel good. If you want to make money with them you have to like animals.” (Swedish farmer)

Wilkie’s concept of ‘concerned detachment’ seems to provide the best description of how pig farmers relate to their fattening animals. Although the relationship with breeding pigs was closer than that with fattening pigs, it did not become as close or as emotional as the dairy farmers’ relationship with cows. Nevertheless for a few French farmers and nearly half of the Swedish farmers the relationship with their sows can be qualified as concerned attachment. In this case, the farmers compared their sows and boars to family or friends as did cattle farmers quite regularly. This could be considered as a noticeable national difference between Swedish and French farmers.

Poultry production: concerned detachment to detached detachment

Poultry farmers generally had more difficulty in responding to our questions about their relationship with their animals. They struggled in describing their feelings towards them and sometimes defined them in negative terms, in terms of what they did not like about the animals. Others compared their relationship with their poultry to those with their other animals, either pets, or other farm animals, and said that they felt much closer to the last two groups.

“You have a lesser bond with a hen than with a cow. With the hens you don’t actually have a relationship. They are on your farm for a year and then they go. Cows are different. They are more likeable. You don’t know individual hens. You keep them for an economical goal. But that doesn’t mean that you don’t

take real good care of them. We try to earn a living with them.”
(Dutch laying hen farmer)

Many poultry farmers talked about their relationships with poultry in terms of production, referring to them as ‘tools of production’. This was more common among broiler farmers than among those rearing laying hens. Generally, poultry farmers did not feel emotionally attached or close to the birds and had no relationship with individual chickens but referred to the whole flock.

“It’s a relationship with the flock, rather than between animal and man.”

“We don’t recognize individual hens, they are all the same.”

“They’re animals but not likeable ones.” (French poultry farmers)

This lack of attachment could be explained in terms of the large number of birds staying on the farm for a relatively short time, especially in the case of broilers. Farmers thought that it was theoretically possible to get attached to an individual chicken, but not when there were so many of them as individuals disappeared into the flock.

“Individual contact with hens is difficult, because there are so many. That’s why I always look at the whole flock.” (Dutch laying hen farmer)

“Yes, I think I feel empathy [towards the broilers], although I do not pay attention to individual chickens. I follow the development of the flock and have a feeling for the conditions in the barn. I sense the state of the birds, the temperature, the smell etc. I notice instinctively when there is a problem. ...There are many things which should work technically and one needs an interest in technique to be able to take care of chickens.”
(Swedish broiler farmer)

Many poultry farmers underlined that they wanted their animals to feel well and considered themselves duty-bound to provide good living conditions. They considered it important to take good care of them but did not feel connected to them by any emotional bond.

“You need to take the time to observe them (...) be very vigilant and alert to any signs of discomfort.” (French broiler farmer)

“I would do anything for my animals. Respect, devotion, listening. Not just when they do badly, but also the satisfaction when they do well. Only there are just too many there to have a personal connection with.” (Dutch laying hen farmer)

Farmers were pleased when their birds were doing well and felt bad when they were not doing well or were ill. Broiler farmers did not like their birds being ill, finding dead animals in the barn or having to kill birds; even though they did not feel emotional about sending them to slaughter.

“We do have a certain bond with our broilers. For instance, 10 years ago we had Newcastle Disease (NCD) and we saw them becoming really sick. That was really bad and we had real trouble even walking through the barn. Not because of the money, but because of what is happening right before our eyes. But when everything goes well with the flock and they have to go

to the slaughterhouse: that is not emotional. That is the way things should go.” (Dutch broiler farmer)

Some of the laying hen farmers claimed that they had a good relationship with their hens, really liked working with them and considered them as ‘fun animals’. Most of these were organic farmers or kept their animals in a free-range outdoor housing system. This attitude was also present in a majority of indoor free-range laying hen systems in Sweden.

“I am a poultry farmer in my heart and in my soul. I do not have the same feelings for other animals. It never tires me to do something for my hens. I don’t mind getting up in the middle of the night for them. We never go on holiday.” (Dutch laying hen farmer)

Some broiler farmers spoke more of the job than the animals when they spoke of their relationship with their animals. These farmers enjoyed working with broilers when they were young, but when the broilers reached a certain age and size, the work became unpleasant and they did not even like to enter the barn.

“I don’t have them for pleasure. I’m trying to earn a living. Of course I enjoy the work, but I don’t have a relationship with the broilers. The tiny chicks, that is nice and fun, but after that it’s work.” (Dutch broiler farmer)

‘Detached detachment’ and ‘concerned detachment’ seem to be the best way of describing poultry farmers’ relationships with their stock. This does not preclude taking good care of the animals and watching them closely, but one of the main features of this relationship is the de-individualization of animals. Chickens are perceived as part of a group (a flock) and of a production system. The number of animals is undoubtedly an important factor, as is the lack of contact with individual animals. This later issue is related to the housing system. Farmers with housing systems that minimized contact with the animals and had a high stock density tended to lose sight of the animals as individuals. Farmers who kept chickens in outdoor and free range systems expressed more attachment to their chickens and recognised them more as ‘real’ animals. Some broiler farmers expressed that they had difficulty in even confronting the living conditions of nearly full grown broilers. This suggests that avoidance of attachment might also be related to feelings of guilt. Again, except for the fact that the Swedish farmers express more often some kind of attachment to their laying hens, there were no significant national differences in the attitudes of the poultry farmers.

Factors influencing farmer-animal relationships

The results draw on Wilkie’s concepts of attachment and detachment that were initially adopted and tested on cattle and sheep farmers in the UK. In this paper we have extended Wilkie’s analytical framework to professional cattle, pig and poultry producers in three EU countries. We identify the presence of Wilkie’s four categories of levels of attachment. The attached attachment level is rare in our sample and seems to be reserved by farmers for only some cows, few pigs and mainly for their pets. It is indeed rarely found among professional livestock farmers, who earn their living by rearing livestock and selling them or their products.² This includes sending their animals to slaughter sooner or later and this leads

² Dockes and Kling (2006) already identified a group of professional farmers who felt an emotional bonds similar to attached attachment for their animals.

many farmers to consciously avoid to becoming as attached to their stock as they are to their pets.

Farmers have clearly differing degrees of attachment to their farm animals. This varies between, as well as within, species. For some animals farmers felt concerned attachment, while for others they had a feeling of concerned, or even detached, detachment. Table 2 identifies which animals fall into these categories.

*Table 2: Predominant type and level of farmers' attachment to farm animals**

	Attached attachment	Concerned attachment	Concerned detachment	Detached detachment
Dairy cows	X	XXX	X	X
Suckling cows	X	XXX	X	
Calves		X	XXX	X
Bulls			XXX	X
Breeding sows		XX	XXX	
Fattening pigs			XX	XX
Poultry outdoors			XXX	X
Poultry indoor			XX	XXX

* the number of Xs expresses the frequency of the attitude

Animal species: ability to identify and communicate:

Table 2 shows that animal species does make a difference, even if one can encounter different levels of attachment with each species. Farmers generally felt closer to their cows than their pigs or chicken. The cows were perceived as more likeable animals and were the species which farmers compared most often to friends or even family members, and of sharing mutual feelings and relationships.

Sector and housing system: frequency and intimacy of human- animal contact:

Farmers generally felt more attached to breeding animals than to fattening ones. While farmers were generally more attached to their cows than their pigs, they were fonder of their sows than their fattening pigs. They explained this difference in their feelings for animals of the same species in terms of the animals' functions and the frequency and intimacy of the contact they had with the animals in their daily caring routines. Fattening pigs, veal calves or poultry are fed and controlled in groups; generally this offers little opportunity for bonding with individual animals (depending on the need for more individual contact during other caring activities). In addition the process of feeding is often mechanized. By contrast, monitoring a reproductive cycle or assisting a sow or cow during delivery are specific tasks that involve close, direct, and more intense contact, with individual animals. They also involve physical or bodily contact which, following Porcher (2006), induces feelings of attachment. The task of milking a dairy cow at least twice a day also requires close physical contact. Developing a relationship of trust with the dairy cows by speaking to them, patting and caressing them further strengthens these bonds. This also helps the farmer in that it creates a safe working environment and stimulates milk production.

Housing system and stock density: the individuality of animals:

Although there were some farmers with an affectionate relationship with their animals in every kind of housing system, the housing system (and its level of mechanization) clearly influenced farmers' relationships with their animals. Some housing systems hide the individual animal, either as a result of the small and closed pens (as with veal calves) or cages (as with laying hens), or because the individual animals get lost in a mass of animals grouped together (as with broiler sheds). As a result the animals become de-individualized and sometimes even partly de-animalized. Chickens for example were often seen as part of a

flock and easily perceived as part of the production system. Not only did they lose their individual status, but their status as ‘real’ animals also became obscured and changed into ‘living production tools’. In some housing systems the animals remain more visible as (individual) animals than in others because the farmers can see them moving, playing and interacting with other animals. Organic farmers and those engaged in specific animal welfare schemes often make use of different housing systems than conventional farmers and this helps to explain why they are more attached to their animals.

Another important factor was the number of animals that a farmer deals with. The larger the number, the harder it is to differentiate between individuals. In general on-farm populations of fattening animals tend to be larger than those of breeding animals, especially in the production of fattening pigs and broilers. But stock density depends also on the husbandry or housing system (and its level of mechanization). The stock density of laying hens tends to be higher in caged systems than in free range systems. This may explain why organic or alternative farmers have a closer relationship with their animals than conventional farmers (see also Segerdahl 2007). Generally poultry systems, whether for meat or egg production, have population sizes that prevent farmers from perceiving the chickens as individuals. Most poultry farmers reported relating to their flocks as a whole, not to recognizing individual animals.

On farm-stay, life span and production for slaughtering: time for bonding and deliberate avoidance:

The different perception of, and relations to fattening and breeding animals can also be explained by the difference in their life spans and length of presence at the farm. Dairy cows have longer productive lives than sows; sows longer productive lives than fattening pigs, which in turn have longer productive lives than poultry. When farmers are working with fattening animals that they know will have a limited life span, they often deliberately keep the animal emotionally at a distance and avoid attachment in order to protect themselves from any negative feelings. Breeding animals on the other hand, remain on the farm for longer, and this provides greater opportunity for the farmer to develop a relationship with them. That life-span matters is also confirmed by the fact that those integrated (Swedish) farmers who fattened pigs born on their farm, tended to express more empathy also towards their fattening pigs.

Links to farm and family history: entering the personal domain:

The role that animals play in the personal history of the farmer provides another explanation for the difference in status of fattening and breeding animals. For cattle farmers in particular, breeding animals represent a form of genetic capital, used to create the next generation of animals, with better traits and qualities than the current generation. These farmers mostly breed with animals that were born on their own farm, from bloodlines created by the farmer’s parents or earlier generations. This provides a connection between the history of the animals, the farm and the family. Farmers do not have such a sense of continuity with animals reared for slaughter and if the fattening animals were bought instead of bred on-farm there is no historical link at all.

Taken together these factors (animal species, production sector, housing system, stock density, on farm, stay, life span, function and history) help to explain the differences in farmers’ relationships with their animals. Farmers tend to feel more attached to animals which they see as likeable and responsive to humans, those which require frequent and intimate contact, and those which stay on the farm for a longer period. The number of animals and the ability to see them as individuals also matters. These variables are related not

only to the species, but also to the function of the animal and the production system of which it is a part. Cows are perceived as the most likeable of the three species and farmers deliberately avoid getting attached to animals with a short life span. The housing system also has an influence as it affects the number of animals kept and their visibility as individuals and manifestation as animals, and has implications for the frequency and intimacy of daily human-animal contact.

Conclusions

Farmers are expected to care about their animals and to look after their welfare. This is part of the traditional image of farmers (Fraser 2001). But also modern society at large and farmers themselves both consider caring well for animals as an essential element of being a good farmer. Yet there are also increasing social concerns about animal welfare and the possible lack of empathy from modern day farmers towards their animals, brought about by intensification and mechanization of animal husbandry. This article reports on how farmers themselves describe and experience their relationship with their farm animals.

The analysis makes use of the framework provided by Willkie (2005) who distinguishes four types of relationship of varying levels of attachment and detachment. This suggests that the frequency, intensity and intimacy of farmers' contact with the animals defines the level of attachment or detachment that farmers feel for their livestock. Willkie's study focused on cattle farmers, comparing the experiences of professional and recreational farmers in the UK. This paper focused solely on professional farmers but extended the analysis to three animal species, using different production sectors, housing systems in three different countries.

Professional farmers' relationships with farm animals ranged from concerned attachment (and even attached attachment for a few farmers) to detached detachment. Hardly any of the farmers qualified their relationship with all their farm animals as attached attachment. Generally, they only felt such close, emotional bonds with their pets and sometimes a few cows or pigs. Our analysis confirmed that animal species matters as does the purpose for which they are kept, the number of animals, the length of their stay on the farm and the frequency, intensity and intimacy of the contact between the farmer and the individual animal. In general farmers felt more attached to cows than to pigs or chicken as they find cows more likeable and are able to enter into mutual relationships with them. Farmers also felt closer to breeding than to fattening animals, because the former generally needed more individual care and attention and stayed longer on the farm.

Farmers often deliberately avoid becoming attached to animals destined for slaughter that will only stay on the farm for relatively short periods, such as fattening pigs and broilers. In Willkie's terms the relationships that farmers have with fattening pigs, broilers and laying hens can best be described as ranging from concerned detachment to detached detachment. The organization of the production and housing systems plays an important role as it influences the chances of the farmers recognizing the animals as real animals instead of living means of production, and offers different opportunities for physical contact with individual animals. Within some systems it is easy for animals to become de-individualized or even de-animalized, as they get lost in the group and become part of the production technology. This happens most frequently with fattening pigs, broilers and laying hens and to a lesser extent with bulls and calves. In these intensive husbandry systems farmers deal with large groups of animals, often use sophisticated technological devices to provide daily care and, hence, hardly have any contact with individual animals. Sometimes animals regain their individual status by chance when for instance sickness requires that farmers offer individual care. 'Detached detachment' does not preclude taking good care of the animals and avoidance

of suffering. They deserve this respect as ‘living means of production’. What seems to be lacking is the emotional aspect of empathy, the recognition of the animal’s individuality and the acknowledgement of its animal nature.

At the opposite end of the ‘attachment-ladder’ we find mostly dairy farmers and some breeding pig farmers, who described their relationship with cows as one of concerned attachment (and even attached attachment for a few of them). They liked their animals even though they were kept for production. Farmers never lost sight of the individual status of the dairy cows or their status as ‘real’ animal. Taking care of them involved close physical contact which also stimulated emotional bonding. The fact that dairy farmers often bred their own animals making use of old bloodlines was also important as this connected the animals and the farm through generations. The cows became, as it were, part of the family history.

The middle position of concerned detachment was most prominent among farmers with breeding sows, calves in group housing, broilers or laying hens when kept outdoors and sometimes fattening pigs when kept in integrated systems. These animals had in common that they are kept in a way in which the individuality of the animals remained visible. This was partly because of the individual care involved but also, with calves and broilers, because these housing systems allow the animals to exhibit individual behaviour by moving around and interacting with other animals. This prevented these animals from becoming de-individualized and de-animalized which tended to happen to the same species kept in intensive housing systems.

While farmers kept animals for economic reasons they still felt responsible for taking good care of their animals. This is related to their perceptions of good farming, in which taking good care of animals is seen as a key element (Bock and Van Huik 2006, 2007a/b; Porcher 2006; Tovey 2003). It is also a prerequisite for achieving good technical and financial results. Good management of livestock also provides the farmer with the means to live in the countryside and enjoy ‘the way of living’ of a farmer. These latter aspects of farmers’ relationships with their farm animals, together with the sense of joy and fulfilment that farmers received from working with them, explain why they care about their farm animals even if they are instrumental for achieving an income. This study found hardly any difference in the attitudes of farmers in different countries, that could not be accounted for by the prevalence of different production sectors and housing systems within the countries. These are partly related to different national animal welfare regulations.

The ongoing process of agricultural scale-enlargement and the concentration of animal production in a smaller number of large farms will continue to influence farmer-animal relationships, since these developments increase the number of animals that a farmer has to look after. At the same time more technological devices are being used for taking care of the animals. From our research we would expect these trends to contribute to a more detached relationship between farmers and their animals: with the animals becoming de-individualized as group care replaces individual care. Animals can even be de-animalized when they become perceived as solely living tools of production. There may, hence, be good reason to worry about the weakening of farmers’ attachment to certain animals in sectors, such as meat production, where scale-enlargement and intensification is ongoing.

This could be counterbalanced by a tightening of animal welfare legislation, to promote the adaptation of production systems that strengthen farmers’ contact with individual animals, counteract the disappearance of individuality within the group and prevent farmers from seeing animals as part of the “production machinery”. This could assist farmers in maintaining their perception of their animals as real animals. Such systems need not necessarily be organic, although several authors are clear about the benefits of organic

systems in terms of animal welfare and human-animal bonding (Lund and Olsson 2006; Segerdahl 2007; Fjelsted Alroe et al. 2001). Taking into account the findings of this and other studies about the mechanisms that assure the recognition of animals as animals and as individuals and that facilitate attachment from farmers to their animals, it seems crucially important that farmers get physically close enough to the animals through seeing, touching, speaking and listening to them. Such proximity seems to be at the foundation of good stockmanship, or what farmers themselves define as archetypical 'good farming practice'.

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BOOK REVIEW:

WORLDS OF FOOD: PLACE, POWER, AND PROVENANCE IN THE FOOD CHAIN
BY KEVIN MORGAN, TERRY MARSDEN AND JONATHAN MURDOCH, OXFORD
UNIVERSITY PRESS, 225 PP ISBN 0-19-927158-5 / 978-0-19-927158-0
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By **Tim Lang**
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This is an important book for two reasons. Firstly, it stands as the fine but sadly last book of Jonathan Murdoch, who tragically died before its publication. Secondly, and more happily, it represents yet another valuable output from three key thinkers and researchers in the vibrant social science team working on food systems at Cardiff University.

The book sets out to break with the binary thinking which the authors see as bedevilling agri-food analysis which too often describes a “bifurcated food sector” (p.8). This conventional analysis proposes that the food system can best be seen as a conventional system driven by productivist agriculture, large companies and mass markets, a system which is “de-territorialising” food. And then there is an ‘alternative’ system of nascent ecological agriculture characterised by smaller companies, localised markets, committed to “re-territorialising” agriculture with the goal of sustainable development. The problem with this bifurcated vision, say Kevin Morgan, Terry Marsden and Jonathan Murdoch, is that there is an increasingly “porous” terrain between them. The model might be neat, but the reality is messier.

Instead of imposing or just criticising this view, the authors set out to describe the world that many of us encounter when trying to understand modern, highly complex, internationalising food system. Their argument is that modern food systems are battling over three issues: provenance (what food offers), power (who controls it) and place (where food comes from, the narrative it tells about place from primary production to end consumer’s belief about it).

Morgan, Marsden and Murdoch (henceforth referred to affectionately as M³) remind us that, although so many of us are captivated by trying to unravel modern food’s complexity, food is ultimately about a relationship with the natural world. All the Grand Theories M³ review in early chapters – commodity chain analysis, actor network theory, conventions theory, etc – have amplified a social perspective of food but are in danger of brushing away the relationship with the natural world. It’s not that the grand social theories are wrong; on the contrary, they all offer valuable and ground-breaking insights into contemporary reality. The problem is how to weave them together intellectually. I agree. Social scientists’ value to civil society and policy-makers is sometimes diminished by our adding to, rather than diminishing, the ‘policy cacophony’¹. And it is when M³ address this issue of governance that, for this reviewer, their book takes off. The world of policy, already fissured by multi-level governance, is charged with high politics. This partly explains why agriculture does not quite or always follow the path to globalisation mapped by other commodities such as cars or electronic white goods though it does on some fronts. That’s why the

cry of free traders today is ‘why is food so special?’, a shorthand for removing public subsidies. Food, they say, is just a commodity like any other. Not so, say M³, reinforcing a view seminally charted by Kautsky², but amplified by others³. There is no need for defensiveness. Modern food systems have many features peasant societies do not. They are dynamic almost to the point of volatility; complex to the extent of being occasionally labyrinthine; characterised by clusters which can span the globe; industrialised to a point of blandness; enshrining aching long distances between producers and consumers even when the food looks ‘local’; having a capacity to squeeze farmers through the retailer’s power over specifications; and having the capacity to drain regions of their food lifeblood or (is this worse?) lashing them to a neo-colonial just-in-time contract. It is on this latter point of regionality and place that M³ turn to a series of fascinating case studies of regions. And it is these which above all make this book stand out, combine their own recent researches with others’ work.

In Tuscany they look at how the creation of modern Italian regional government opened up political space – offering leadership, funds, identity protection, pursuit of new markets and more – to nurture a renaissance from farm to town. Tuscan policy has centred on “managing holistic territories rather than discrete sectors”. The focus is Toscana rather than pasta or wine. In California, by contrast, there is no California, only Californias. The last century or so has witnessed remarkable innovation; strawberry production came from nowhere. Wine too. Its milk production outstripped Wisconsin’s by 1993. And yet, California has been a heartland for the reaction, leading fights over rBGH, promoting urban agriculture, creating farmers’ and organic markets, is now locked into waterwars, and a much remarked re-birthing of an ‘alternative’ agriculture. M³ do not see this counterculture as evidence of bifurcation for the simple reason that neither conventional/dominant nor alternative agri-food systems are static. Both are dynamic and face big challenges (labour, water, image).

Their third study is of their home territory, Wales. M³ show how the legacy of being the first industrial nation still surfaces. The culture of food-as-fuel, they argue, has helped marginalise Wales’ dominant hill farmers while bowing before the UK’s highly concentrated food retail sector. Yet this mix is paradoxically now grappling with a desire for authenticity and place-identity. Wales (like Scotland and, when peaceful, Northern Ireland) has been given more political autonomy by the post 1997 ‘New’ Labour Government. This is not the regional autonomy of either Tuscany or California, though that may come, but compared to being ruled from London, it is a big change. This new Welsh governance includes food and agriculture, so the new political élite has found common ground with activists to promote quality marks, notably for lamb. (Indeed, as an aside, since this book was published, the Wales Assembly Government has received increased powers, and shows signs of pursuing this quality approach alongside wider quality of life and well-being commitments; the new politics is seizing food identity alongside appeals to cultural and economic identity.)

Taking stock of their three case studies, M³ propose that a “new moral economy of food” has emerged. They use Sayer’s 2000 definition that moral economy “embodies norms and sentiments regarding the responsibilities and rights of individuals and institutions with respect to others.”⁴ I prefer Edward Thompson’s approach in his magisterial 1971 essay ‘The moral economy of the English crowd in the eighteenth century’ in which he showed how the transition from a feudal to a capitalist industrial

society spawned reactions ranging from overt to petty revolts at the ruthless transition in shared values and assumptions⁵. Common assumptions about rights and access to food, in a fragile food economy, betray the meanings of daily life. Riots, theft, politicking, drastic action, all show how those assumptions can be and are contested. To apply the term moral economy of food to the transition today as M³ do is correct, precisely for these reasons. The deracination in contemporary food, - where 'glocal' (mock local, globally sourced) food vies with authentic regional or global and, more rarely, authentic local - is being contested. So is the ecological neo-colonialism of intensive food systems where 'pure' foods derived in distant lands are marketed as socially just exports. Weeding the sham from the truly fair-trade is one among many of the challenges social justice movements now have. All is not as it seems. This complexity adds grist to the M³ mill. And labelling – offered by neo-liberals as the mechanism of consumer choice – actually becomes a nightmare mix of standards, logos, messages. No wonder label use, if at all, is restricted to a second or two, thus failing to be facts which aid discrimination but become yet more info-bits to weed out from the info-soup.

This is a fine book, thoroughly to be recommended. It is well written and taut in structure, managing to combine case study specifics with intellectual panorama. It connects disparate discourses while offering its own. It conveys the M³ take on modern food, while being faithful to the happily reborn critical tradition within food social science. It also shows the value of its authors' engagement with the real world of policy. This doesn't submerge their research but, on the contrary, informs and excites it.

¹ Kautsky K. *The Agrarian Question*. London: Zwan, 1988 [1899]

² Goodman D, Redclift M. *Refashioning Nature: Food, Ecology and Culture*. London: Routledge, 1991.

³ Sayer A. Moral Economy and Political Economy. *Studies in Political Economy* 2000; 62:79-104.

⁴ Thompson EP. The moral economy of the English crowd in the eighteenth century. In: Thompson EP, editor. *Customs in common*. Harmondsworth: Penguin, 1993 [1971]: 185-258.

⁵ Thompson EP. The moral economy of the English crowd in the eighteenth century. In: Thompson EP, editor. *Customs in common*. Harmondsworth: Penguin, 1993 [1971]:185-258.